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# CB Action

**MANAGING EDITOR**
Len Shaw

**EDITOR**
Peter Smith

**PRODUCTION MANAGER**
Paula Parker

**ADVERTISING**
**VICTORIA**
Peter Smith
Newspress Pty. Ltd.,
Box 628E GPO
MELBOURNE
Phone 605 4203
**NSW**
Gordon Durnford,
The Globe Bridge Company
64 Victoria St.
NORTH SYDNEY 2060
Phone (02) 957 2033
**SOUTH AUSTRALIA**
Allan Taylor
79 McLaren St.
ADELAIDE 5000
Phone 223 6629
**QUEENSLAND**
Claude Olive Media
Cnr. Upper Roma St & Eagle Tce
BRISBANE, 4000
Phone (07) 846 2255

**PRINTER AND PUBLISHER**
Leonard J. Shaw
38 Granya Grove, Mt Eliza, Vic., 3930

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Waverley Offset Publishing Group, Geddes Street, Mulgrave, and Quadricolor Industries, 33 Glenvale Crescent, Mulgrave.

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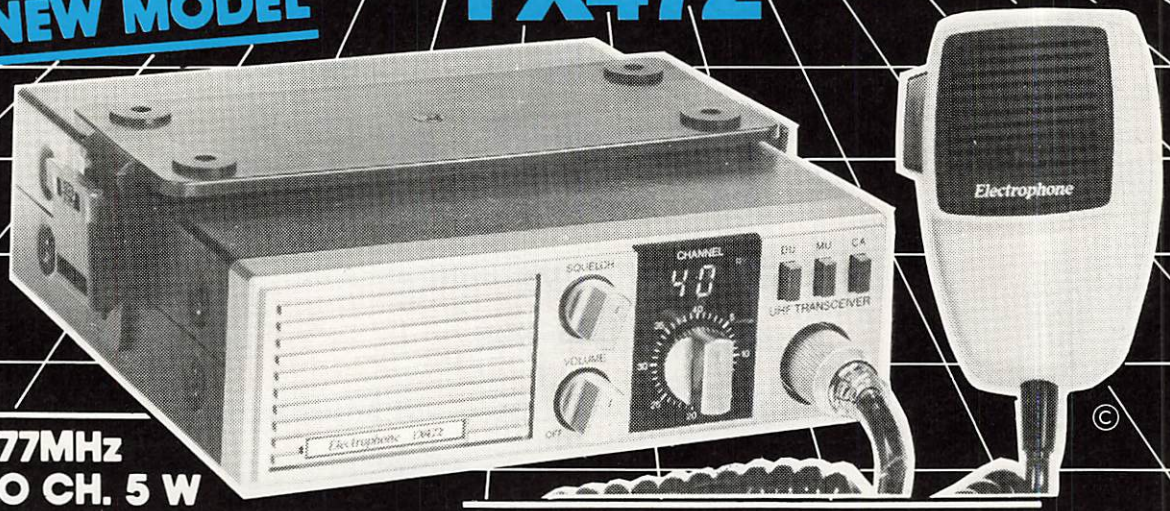


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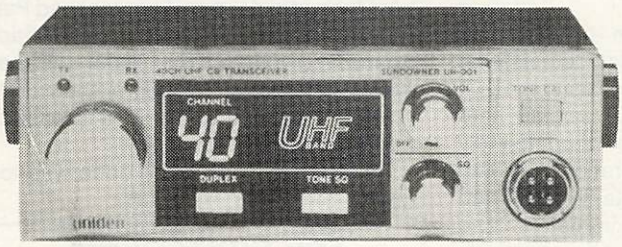
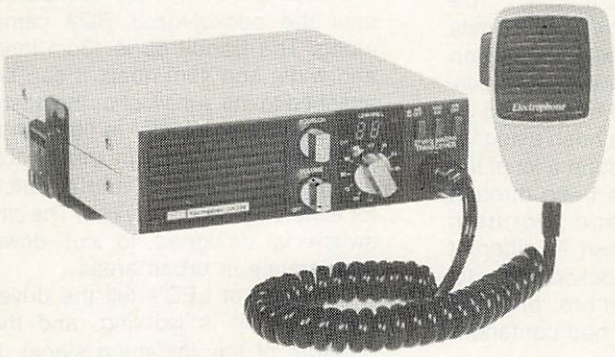



**ELECTROPHONE TX 472 UHF**



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# On Channel

**You asked for it — you've got it! CB ACTION IS NOW BI-MONTHLY. I know you didn't ask for the 50¢ price rise, but you can't win 'em all . . .**

★★★★★

**You will notice two new columns starting this issue — one devoted entirely to 27 MHz, and the other to UHF. The request for project contributions made last issue apparently fell on deaf ears — or eyes. Maybe the amateurs are correct in their opinion that all CBers are just "black box" operators, with no interest in building their own gear. If you have something of interest, drop a line to us at: GPO Box 628E, Melbourne, 3001.**

★★★★★

**Talk about new gear. The test locker in the office looks like Pandora's box. There is hardly enough room for our Playboy collection. Remember our old friend "Fred, the Unfortunate"? Well, he's into computers now, and still keeping the repair shops in business but, after looking at our test locker, he's thinking seriously about dusting off his ringo and power mike and getting back on air. Should be good for a laugh . . .**

★★★★★

**Old Fred hasn't changed much. How about this for a week of woe! Zapped by a radar gun 200 metres from his driveway — cost him $90; imported a new modem for his computer — all the way from Hong Kong — saved himself $50, but it won't work, so it is costing him $60 plus parts to get it modified; blew a transistor in his amateur rig — $80; got a tad close to the garage wall in his "boy racer" — $800; bought Mrs Fred a new TV set, because he was "getting into" the old one every time he hit the computer — now Mrs Fred is happy, because the TVI is gone, but Fred's crying a bit — the TV is getting into his computer; and last, but not least, the swimming pool pump has spat it's dummy out. The cost of replacement hasn't been disclosed at this point in time, but a four-figure sum is being bandied about.**

**Can you imagine how much trouble Fred's going to get into if he takes up CB again?**

★★★★★

**Travelling home one evening last week, I found it necessary to have words with a colleague who I knew was also mobile at the time. I flipped over to his working channel and waited until his missus activated his selcall to give him the fish and chips order, whereupon I announced my presence with my DOC callsign. I was immediately abused by a cretin who assumed that because I used a legal callsign, I must be a commercial operator. Now, as it happens, I monitor my colleague's working channel as well as my own, and quite often hear the aforesaid cretin discussing the state of the pop charts, his new treatment for hickies, and thoroughly bamboozling a certain young lady with his intimate knowledge of SWR and other things electronic — you could write all he knows on a flie's eye, in bold capitals, with a piece of charcoal — and never a hint of a callsign, unless it happens to be "Hullooooow" (spoken through the nose, in a high falsetto voice). If the commercial operators have a reputation for being the only ones to use their callsigns, then I reckon it's about time we Good Buddies pulled our socks up if we want any help from DOC to get some more channels.**

**See you in September . . .**

# "RADAR DETECTORS" Which is the best?

## "We pitted the Bandits' against the Whistlers'"
## "One make came out clear leader"

**The radar detector industry has had its ups and downs. Recently a couple of makes have clashed in a savage marketing battle. Advertising claiming this particular detector is the best in the world appears. At the same time another detector is being proclaimed champ of the highways. Marketing ploys do not interest Truckin' Life all that much, but readers were becoming confused. Phones were running hot with operators asking what is going on? Which detector is best? Do any of them work properly? We rallied to the cause, and ran a small independent test west of Sydney using the two most popular forms of police radar. We pitted the Bandits against the Whistlers. One make came out clear leader. Bruce Honeywell survived the shootout and reports . .**

IT was high noon on a long stretch of road west of Sydney, somewhere with the unlikely name of the Cowpastures which happens to be the place the cattle brought with the First Fleet were found after they made a break for freedom. With the sun high overhead it was time for a shootout.

But there was no crash of pistols, no ricocheting of bullets gone wrong. Instead, a Canter truck trundled back and forth, doing the eight kilometre round trip time and time again. It was the scene for a shootout comparison of four radar detectors.

The radar detector industry has had gold rush boom periods in the past, and in the following slumps many importers went to the wall. Big bucks have been made and lost. The present market barometer shows that another boom is coming.

There are several makes of radar detector for sale in this country, and as police speed detecting equipment becomes more sophisticated, so do detectors. The superhetorodyne sets of today using modern 'chip' technology are a far cry from those early models.

The pages of *Truckin' Life* and other newspapers and magazines have become something of a battlefield for two makes of radar detector. The Whistler products and Uniden's Bandit line have been making claims and counter claims about their respective efficiencies and how good each make is.

This is understandable, as the Australian free market system lets the gladiators battle it out to the finish. But inquiries at *Truckin' Life* have shown that the advertising campaigns were confusing truck drivers, not at all sure which way to go.

We certainly have not been backing any particular horse in the dispute, but with more and more confused drivers ringing our office each day, it was decided something had to be done. So a test of the Unidens and Whistlers was set up.

Validity is essential in any test, and particularly so with radar detectors. A detector can be 'twigged' up to make it extremely sensitive. Of course that sensitivity might make it completely useless for normal operation by being able to pick up a Kentucky Fried Chicken shop at five kilometres. The unit's life would also be drastically reduced.

So we had to find a way to get round coming out and asking the manufacturers or importers for models for a test. There is usually a selection of radar detectors lying around *Truckin' Life* undergoing general tests. I dug up a Whistler Q3000 I have been using for over 12 months. It had done a lot of the tests with me, and had been through WA, the Territory and Northern Queensland. It had been in different trucks and had been knocked around a bit. I dug it out of an old box, blew the bull dust out of it and I had contender one for the shootout.

I had a Whistler Q2000 in my Pajero, for my own use. I have had it for about eight months and it was working — contender number two. That completed the Whistler side of the contest.

I had placed a Uniden Bandit 55 with a mate running out to Roma, so I caught up with him and pulled it out of his truck. It was working and it had been around for over eight months — contender three was looked after.

The only other detector I needed for this two brand shoot out was a Uniden Bandit RD9. I didn't have one. I contacted Greg Welsh of Speed Safe, an independent retail outlet and radar specialist in Sydney, and said I needed a radar for a test. He told me he had 'them all' and I could pick whatever I wanted off the shelf.

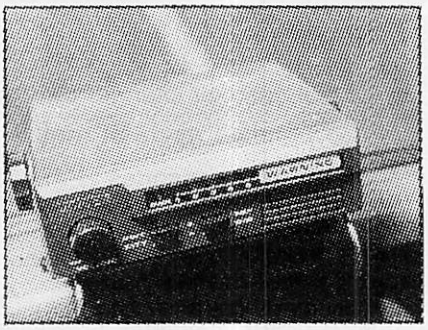
So the radar detectors were organised. Now something to test them with. The RACQ in Queensland provided its own Speed Gun, a hand held X band radar gun. I approached Pat Mulligan of Creative Electronics — I had heard he owned a KR-11 radar set, the dreaded mobile radar unit of the NSW police. He did and was only too pleased to lend it for the test.

All that remained to be done was to do it.

## The Contenders

1. UNIDEN BANDIT 55: The Bandit was the flagship of the Uniden squadron until the pocket-sized RD9 came along. The Bandit 55 is 13cm long and wide, and 4cm deep. It can be attached to the sun visor or the dash. This superhet detector is fitted with a volume control, a bright/dim switch for the indicator lights and a switch for either highway or city use. The city switch is designed to cut down interference in urban areas.

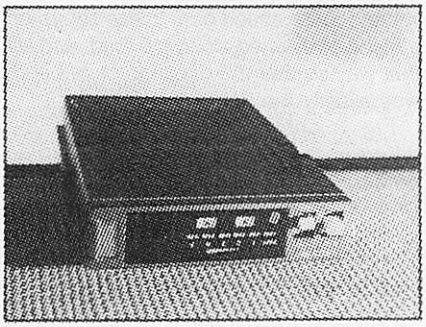
   A series of LED's tell the driver that the unit is working, and the strength of any incoming signal. A large red warning light tells of the incoming radar.



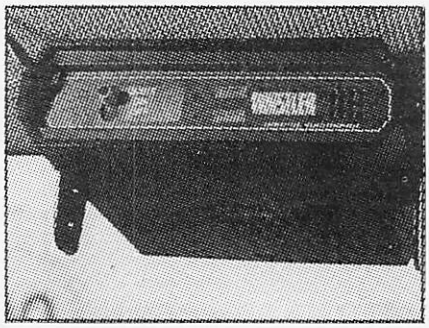
2. UNIDEN BANDIT RD9: This detector was by far the smallest of those tested, only 10cm long and 5cm wide and a little over a centimetre deep. Controls are similar to the larger Bandit 55, with a volume/on/off control, a selection switch that allows audio warning signals, visual warning signals or both, a series of LEDs that

show the strength of the incoming signal. Light indicators show if the incoming signals are either X band or K band radar. As with the 55, there is a city or highway mode switch.

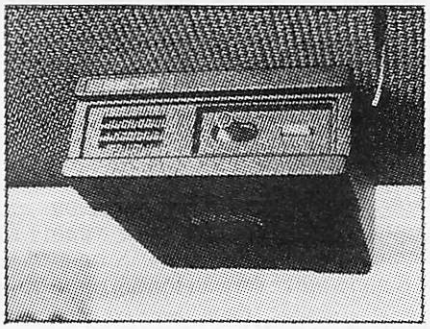
The RD9 has an automatic photo-electric sensor that adjusts the brightness of the control panel to suit the light conditions of the cab.



3. WHISTLER Q3000: The Whistler Q3000 is a larger detector than the RD9, roughly the same size as the Bandit 55. It is a double superheterodyne with a scanning frequency discriminator and operates on the K Band and X Band. The alert signal is a pair of flashing red lights and a loud beeping whistle. There is a one switch operation to three positions — off, on and quiet (for urban areas). The Q3000 is a solid, robust set manufactured in Australia with US componentry and is designed especially for use in trucks.



4. WHISTLER Q2000: The 2000 is smaller than the 3000, and is not designed especially to withstand the vibration of trucks. It operates on similar K and X bands as the 3000 and has similar features. It has a built in one piece visor clip.



## The Test

The detectors were put through a series of four tests. The first was with the KR11 mobile radar of NSW. It was set over a four kilometre stretch of straight road with three rises and one dip.

The stretch of road is symbolised in each test run in Fig 1.

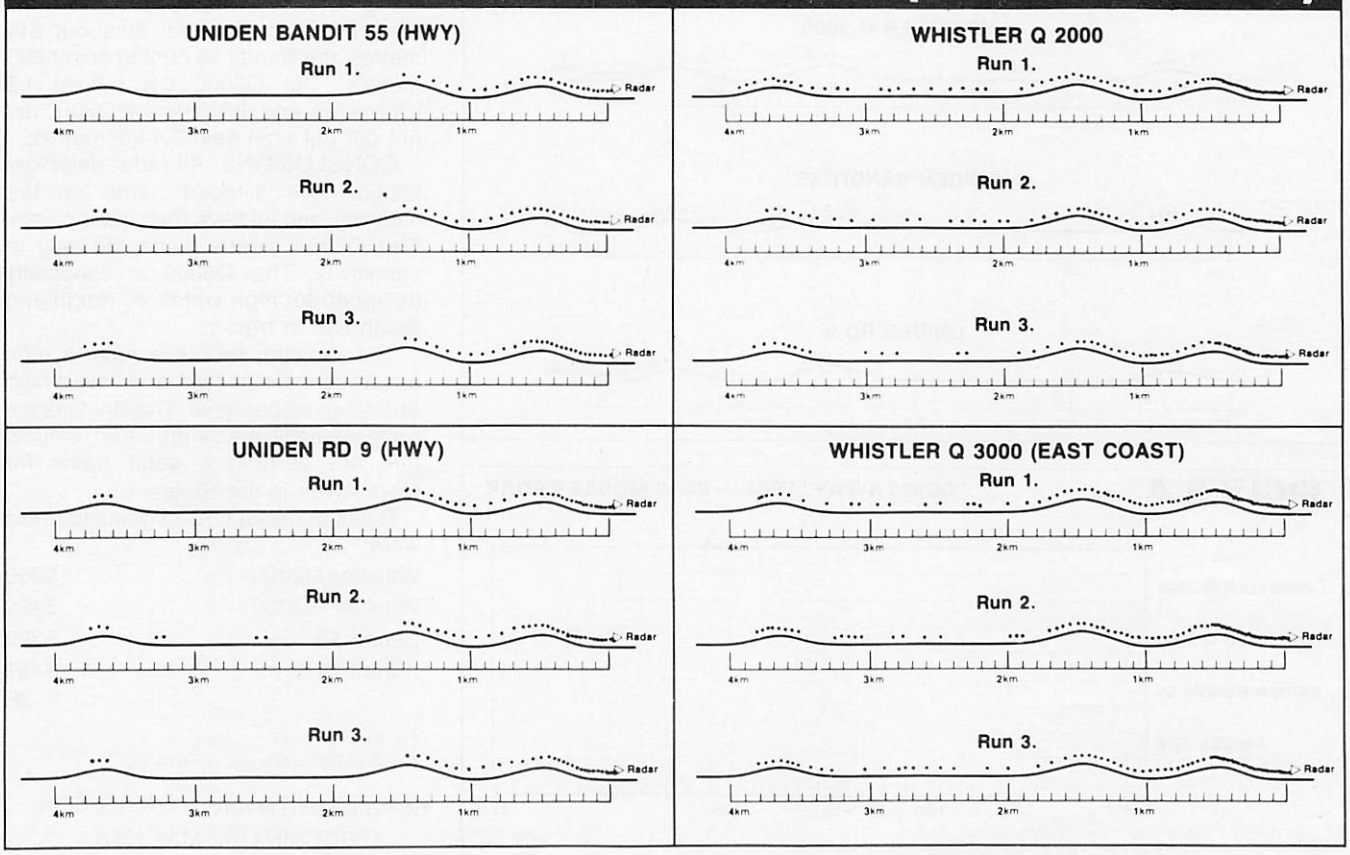
The radars were selected at random for each run, and each one was run through three times so that an average could be worked out. The results can best be seen in Fig 1, where each dot denotes a reaction from the detector.

BANDIT 55: This was the poorest result from the four, with one run returning no reaction until 1.4km from the radar set. The other runs got a slight reaction at the first rise 3.7km from the radar.

BANDIT RD9: The little detector returned a reasonable performance with a strong reaction at the 3.7km rise, and

*Continued next page*

## FIGURE 1: KR11 MOBILE RADAR K BAND (HIGHWAY MODES)



a couple of scattered reactions on one run at 3.3km, 2.5km and 1.7km. Strong reactions were received from the top of the second rise at 2.4km and continued through the dip all the way to the radar set.

WHISTLER Q3000: The 3000 reacted strongly before the first rise (3.7km) and continued on all runs with reactions every 50 metres or so through to the 2.4km rise, and strong loud screaming from there to the radar set.

WHISTLER Q 2000: The little set was, if anything, more sensitive than the 3000. On one occasion it picked up the beam well before the first rise, and it continued on all runs right through the full course.

Fig 1 shows the reactions of the different detectors. The Whistlers gave loud and raucous warnings, compared with the more muted tones of the Bandits. While the Bandits had LED wizardry to denote signal strength, there is little time to look at these when you are hitting the jake and dropping a cog or two in panic.

TEST 2: The second test was a simple one run shootout between the RD9 and the Q3000 to establish any difference in city modes. The RD9 was set on 'city', the Q3000 was set on 'quiet.' As can be seen in Fig 2, the RD9 did not react until line of sight was reached with the radar detector — about 320 metres.

The Q3000 operated as normal, the 'quiet' mode just reducing the volume of the little screamer.

TEST 3: This test involved the use of the X band radar speed gun. It was set up on a tripod and aimed along the road, and left that way so that the direction of its beam was exactly the same for all runs.

Fig 3 shows the reactions of the different radars, with the Q2000 again coming out on top, matched closely by the Q3000. The Unidens were substantially behind in this test.

It is to be noted that Whistler put out two versions of the Q3000, an East Coast and a West Coast. The West Coast has X band tuned up as this is the main radar band used in Western Australia. The Q3000 tested was an East Coast version. Therefore, better X band results could be expected with the West Coast version.

TEST4: The fourth test was back to the K band KR11 mobile radar. It was a 'going away' test, an indication of how sensitive the detectors are to a mobile radar coming up behind. This method of speed detection is used widely in NSW where a police officer can lock in on the speed of a vehicle ahead of him, and pace him in the dark.

Fig 4. shows the results, with the Bandit RD9 cutting out at about 510 metres, the Bandit 55 cutting out at 600 metres. The Q3000 cut out at 1.3 kilometres, and the sensitive Q2000 did not cut out until past 2.4 kilometres.

CONCLUSIONS: All radar detectors tested have a good name on the highway, and all have their good points. The Q2000 clearly leads the way in sensitivity. The Q3000 is especially designed for high vibration, rough and tough use in trucks.

The Whistler products have a high quality control standard, and have a high Australian labour input. The Unidens are professionally made imported models that are earning a good name for themselves in the States.

Retail prices at time of going to press were:

| | |
|---|---|
| Whistler Q2000 | $399 |
| Whistler Q3000 | $499 |
| Bandit 55 | $399 |
| Bandit RD9 | $499 |

For further details contact
Creative Electronics (02) 666 4000

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**FIGURE 2** KR 11 MOBILE RADAR — K BAND (CITY MODES)

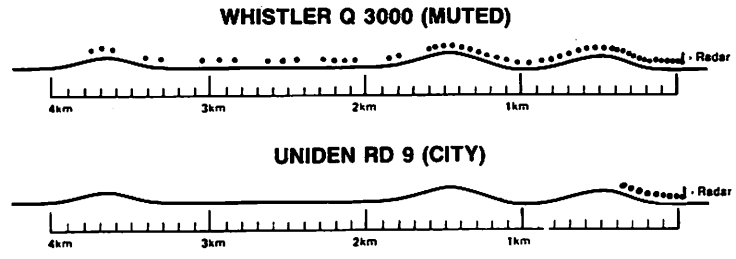



**FIGURE 3** SPEED GUN 1 — X BAND

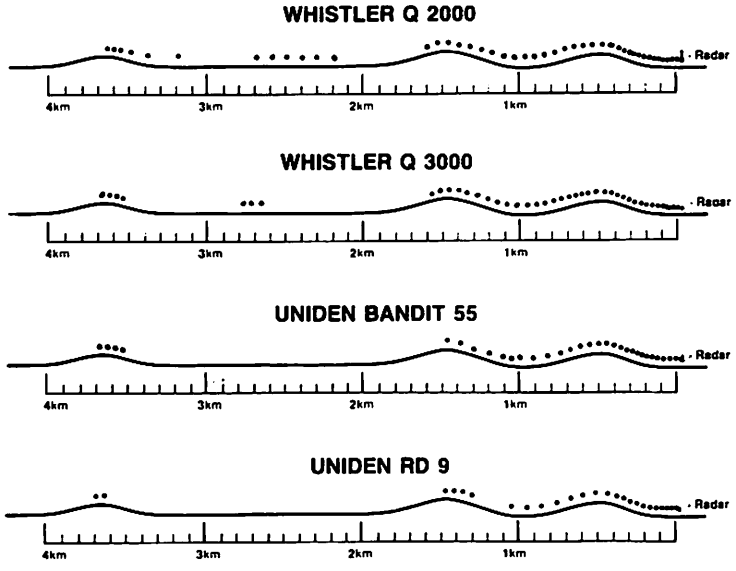
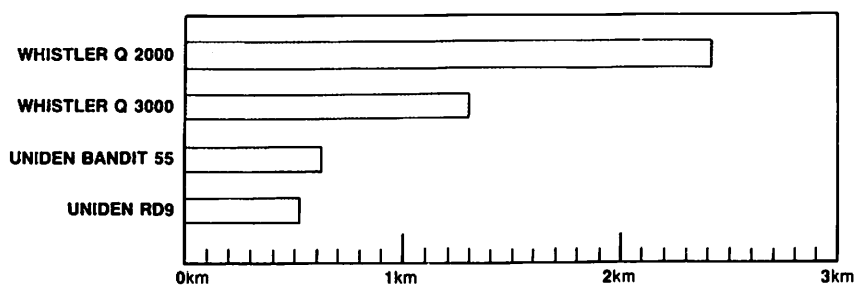



**FIGURE 4** "GOING AWAY" TEST — KR11 MOBILE RADAR



# LOG BOOK

## STOP PRESS

Standard Communications are on the verge of releasing a new handheld UHF unit.

We saw a prototype just before going to press, and can tell you that it is ultra compact and has a few new features — a special socket for connecting an external RF signal meter, and a special battery pack for starters. Unfortunately the sample which we saw was not operating on the UHF CB frequencies, so we couldn't even give it a quick test, but all things being equal, our next issue should contain some more information.

## DOC ADVICE

*Over recent months the Department has noted, in correspondence to your magazine, that some misunderstanding has arisen in the CBRS community concerning use of the AM and SSB emission modes on channels within the 27 MHz band.*

*The Department would like to point out that licensing brochure DOC 14 clearly indicates that there is no restriction on the use of AM on SSB on any channel. This general provision however, applies with the exception of the call channels which are legally prescribed in the Radiocommunications (Licensing and General) Regulations. Channel 11 (27.085 MHz) being designated for AM calling only and channel 16 (27.155 MHz) for SSB lower sideband calling activities. Apart from these frequencies all channels are available for use in either mode and must be shared equally by all users.*

*It would be appreciated if the information outlined could be brought to the attention of your readers.*

*Yours faithfully*
*D. HUNT*
*Manager Regulatory*
*Operations Branch*
*Radio Frequency*
*Management*
*CANBERRA*
*18/3/86*

## RADIO RESCUE

This NSW organization is culled from volunteers who freely offer their spare time in the service of those in need.

They listen out on the emergency channel (9 American, 5 Australian) on the Citizens Band, in order to offer assistance to those in need.

All members of this organization are carefully trained radio operators who run legally licenced CB sets at their own expense.

The type of calls handled by the operators vary from simple relay messages through breakdowns, lost children, missing/wanted persons, floods, bushfires and disasters of all kinds.

No member of the organization receives a salary of any kind — this includes ALL officers and operators, they all volunteer their services and equipment freely as a community service, in order to assist YOU, the public.

Operating expenses are met solely from the members own annual fees, any raffle run to offset these expenses, and, by any donations received.

The organization operates as a non profit body with any excess in funds being donated to a charity of the members choosing, so they are NOT out to make money, however, they do need some funds to cover operating costs as required from time to time, as should be appreciated.

Any CBer who is licensed and feels they might wish to become a member of the organization to offer assistance to those in need may obtain an application form for membership by writing to: Mr M. Harmer, Radio Rescue, Galong, NSW 2585.

This is not a social club — you could end up dealing with a life/death situation, your only reward is the satisfaction of knowing YOU provided the assistance needed at the time.

## AIR PORTABLE REPEATER ?

It had to happen!

First, UHF CB repeaters at fixed locations. Then, Victoria's roving 'portable' repeater, MEL-99.

Now, moves are afoot to take a 477 MHz repeater to the air, in a Cessna 172.

It's all a part of Hatadi Electronics' plans for the 1986 Wynns Safari (the subject of another item in this issue's Log Book), and will provide the entire field of competitors, through their Royce TS-133 mobile UHF rigs, with direct communications and telephone link-up to crews, organisers and the media.

The repeater has been especially designed for this event, and DOC has given approval for the repeater. As the vehicles travel along the safari route from Sydney to Darwin, the repeater will operate on a number of different channels in each district, taking into account local repeater channel allocations and avoiding interference with existing stations.

The rally itself will take place from September 20th-28th, and will cover parts of NSW, Queensland and the Northern Territory. It will certainly be interesting to see how UHF enthusiasts in each area react to the spectacular coverage provided by the airborne repeater, although we hope that a degree of courtesy and commonsense will prevail and allow primary traffic (relating to the rally) to be passed at all times.

Having conquered land and air, who will be the first to operate a UHF CB repeater 'maritime mobile'? The race is on!

## MOBILE ONE

Greg Ackman the chief honcho at Mobile One dropped off a new range of mobile antennas for test.

At the time of going to press, we were waiting for a report from a staff member who has fitted out his four wheel drive with one of the antennas, and is somewhere in the outback. More on this next issue.

For your information, the antennas all feature heavy duty bases with a special stainless steel "super spring", and a special side entry heavy duty spring assembly mount is available to facilitate bumper bar or bull bar mounting.

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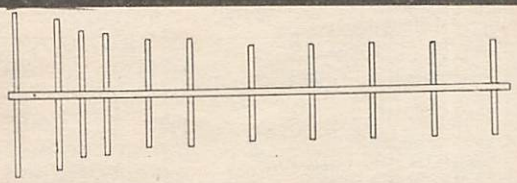

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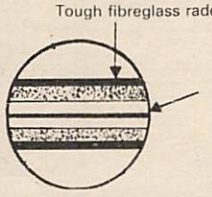


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## 1986 WYNN'S SAFARI

As reported in March CB ACTION, Hatadi Electronics have been chosen as official communications suppliers for this year's rugged Wynns' Safari.

Last year's winner, Andrew Cowan, was using Pearce-Simpson CB radios for two-way communications, although it was noted by the rally organisers that over half of the competing vehicles carried no radio gear whatsoever.

As a result of this, two-way radio is now compulsory for all motor vehicles and bikes taking part in the event. And, with over 200 entrants expected, the task of co-ordinating rally communications is not an enviable one.

Enter Hatadi Electronics, who have supplied each vehicle with the newly-released Royce TS-133 UHF CB radio. 'Last year saw a great need for a motor cycle radio' says Hatadi Sales Director Tim Shaw. 'We believe we have the answer. Too many riders were at risk in horrendous terrain, and their Royce UHF will be the only link with outside world.'

All vehicles on UHF CB will then be linked through a special airborne 477 MHz repeater, which will in turn provide access to ground crews, rally organisers, media and other services via a telephone link-up.

'Pearce-Simpson is synonomous with two-way communications equipment in Australia' said Mr Shaw, 'and we are delighted to be associated with the 1986 Wynns Safari.'

***Andrew Gowan, last year's Wynns' winner and Tim Shaw, Hatadi.***

## CB ACTION/POWER BAND WORDMAZE WINNER

Congratulations to Mr John Barber of South Melbourne, Victoria. John's entry was the first selected from all those correct entries received. A few of you had trouble with clue 4 — and we don't blame you. The correct answer was ''Eastcom'', who would have been one of our advertisers, except that they withdrew on the day we went to press — but they did appear in the advertisers' index under their old name, Eastern Communications.

The correct answers to the wordmaze were: Timeplus, Hatadi, Whistler, Eastcom, Mobile One, GFS, Power Band, Icom, Electrophone, Delta Base.

Our apologies for the Eastcom error, but we did include all the entries with this clue unanswered, but correct in other aspects.


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RIG REPORT

# THE BIG SHOOT OUT

## — ELECTROPHONE, PHILIPS, SAWTRON

In the past it has been our policy to do rig tests on a purely "one off" basis, that is, there have been no direct comparisons with rigs in the same category. We have yielded to temptation this time, because three of the leading brands have released new models at the same time, and the opportunity was too good to miss.

Bear in mind that there are some obvious differences among the three rigs in their basic design parameters, and as a result, in their prices.

The Sawtron 999 and the Philips FM 620 both feature micro-chip technology with electronic channel change. This enables these two units to offer some all singing, all dancing, lemon fresh, you beaut features which are just not possible on the Electrophone TX 472, which comes with "manual transmission" only.

We are going to compare the units under a number of headings, which cover exterior design, features, circuit design, manufacture and serviceability, performance both on the test bench and on air, and finally, price.

### *Exterior design*

We will take the units in alphabetical order, so firstly let's look at the Electrophone TX472.

The TX472 is a masterpiece in understatement. The overall dimensions have been reduced from those of the TX470, which it replaces — it's not as wide, not as deep, but a fraction higher.

Bells and whistles have been kept to a minimum, which means that the front panel is quite simple. Three rotary controls for: on/off/volume/ squelch; channel selection. There are three push button controls on the top right side of the front panel for; duplex (repeater operation); mute (used with optional Selcall); tone burst transmission (also for use with Selcall).

The microphone is front mounted with a very substantial connector, and herein lies the rub — it gets in the way when you use the channel selector control. However, if you think that we are going to advocate its placement on the

***The antenna connection and power lead, TX 472.***

side of the unit, you are wrong — how could we after all these years of giving the manufacturers heaps about getting the mic. socket onto the front panel . . .?

The cause of this tight grouping of the controls is quite simple — the TX472 has a front mounted speaker, which is an excellent feature, making an external speaker unnecessary if you mount the unit in the dashboard.

Situated above the channel selector knob, we find a group of LED indicators. Firstly there is the channel number readout, with the RX and TX indicator lights on either side. Below these are indicator lights for the repeater function, and Selcall call confirmation, which lights up when the tone burst button is pressed — provided Selcall is fitted.

There is no provision at all on the TX472 to give any indication of either signal strength, or RF output. No meter, no bar graph lights — no nuthin! Ah well, you can't have everything.

Obviously the controls were designed on the KISS principle (Keep It Simple, Stupid), and to borrow a term from the computer industry, it succeeds in being "user friendly".

The rear panel is quite a departure from previous Electrophone practices, mainly in relation to the antenna connector. Instead of the usual S0239 connector mounted on the panel itself, Electrophone have opted for a co-ax tail with a PL258 line socket.

This idea is to be commended, as it allows the unit to be installed in tight situations without having to worry about how you are get going to get to the back panel to connect the antenna. Electrophone have taken the trouble to install a substantial sleeve to protect the cable for the tail where it comes out of the case, to minimise the danger of damage. Good thinking lads!

The power socket, which is also on a tail, has been similarly treated. A 3.5mm mini plug has been included on the back panel for connecting an external speaker.

The mounting bracket which is illustrated in the handbook — a device with "quick release snap lock saddles" did not come with our test rig, which had us on the blower to find out why. It appears that the brackets received in the first shipment did not come up to Electrophone's spec, and were returned. The idea looks good, and we will be interested to try one when they have got the bugs out.

The bracket which came with the unit was the regular slotted job, complete with rubber buffers, which has been a feature of Electrophone rigs from the beginning. It's solid, well designed, and in short, it does the job quite adequately.

During the course of the same telephone conversation re the bracket, we discovered that by the time this issue goes on sale, Electrophone will have two more options available — a dual watch feature, which allows the operator to monitor a repeater channel while using another channel, and a scanning feature covering the whole 40 channels. Prices have not been set yet, but a ball park figure of around $60 for each option was bandied around, but don't hold them to it, seeing as how the Australian dollar is up and down like a brides nightie against the Japanese yen.

Overall, the TX472 has been well thought-out from the operators' point of view, and looks good. The colorscheme is pleasing, with metallic grey featuring on the front panel, and dark brown wrinkle finish on the outer case, which incidentally, is a good neat fit.

We turn now to the Philips FM320, which, to our way of thinking, should have been designated the FM640, because it's twice as good as the FM320 . . .maybe Philips were being just a little bit conservative.

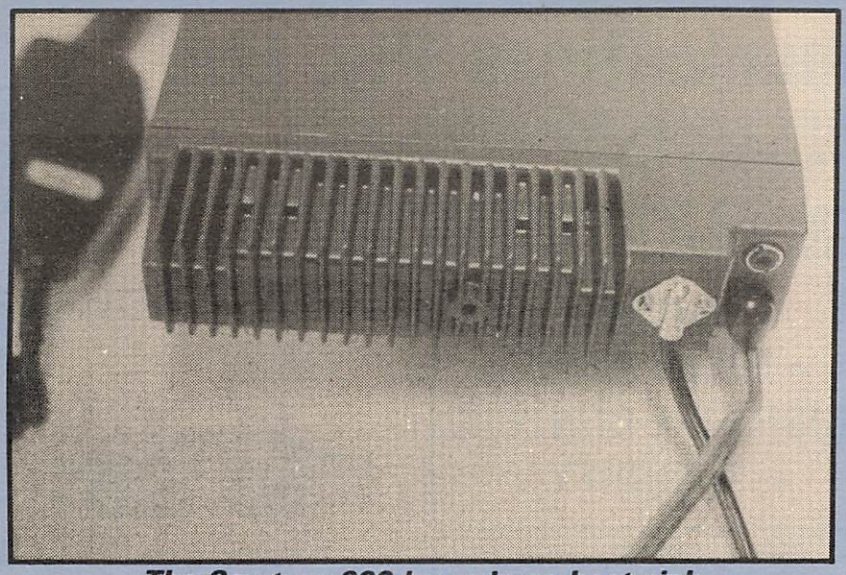
There is no doubt that the 620 has retained some of the external features of its predecessor. The lightweight plastic casing has been kept, which gives a decided advantage to this unit in the weight department. Not important? Horsefeathers it isn't. Try hanging one of the heavier units from the plastic dashboard of most modern cars — but remember to wear your boots with the steel toe caps . . .

The other two "features" which have been retained we are not so impressed with — the DIN microphone socket, and the Belling Lee antenna connector on the rear panel. Maybe we can forgive Philips for using the DIN type microphone connector, but c'mon lads, that Belling Lee antenna socket is, to put not too fine a point on it, bloody awful. Any serious operator replaces this abomination with a BNC connector before he even powers the unit up, and to prove a point, we looked at over 20 FM320s which were lying around the workshop in various states of disrepair, and all but one had a BNC fitting.

We know that your argument is based on compatability with existing Philips equipment, but that only re-inforces our argument of several years ago that the Belling Lee job was wrong. All you are doing now is compounding the error. If we want to test a FM320, or 620, we have to either use a lossy adaptor, change the connector on our co-ax, or change the fitting to a BNC. For this test we opted for the latter, because (a) the adaptor kept falling out of the rig while mobile, and (b) it seemed like a good idea at the time.

Having gotten that out of our system, we'll press on.

The front panel is relatively uncluttered, considering the number of functions which can be called up from it. Its basic design has not been altered, except that the S/RF meter has been replaced with a bar graph of LEDs, which perform the same function, and the volume control remains the same. But, that's where the similarity ends. There are three multi-position switches which from the left, are as follows: **mute switch** — a three position switch which turns the mute on and off, and also enables you to select an audio quality which has less treble; **scan switch** — a three position switch which turns the scan function on and off, and selects your programmed "nominated channel"; **mode switch** — a three position switch which turns the unit on or off, and also selects the repeater function when required.



***The Sawtron 999 has a large heat sink.***

The channel change toggle is located below the LED Channel readout, which incidentally is a ripper. Unlike the normal LED readouts, this is a high intensity job, and doesn't fade into oblivion as soon as it gets some daylight on it — a big improvement. Above the mic. socket there are three indicator lights to tell you whether you have selected the repeater function, whether your select call has been activated (in conjunction with a buzzer — you can't miss it!), and the TX indicator. The select call is an optional extra.

The rear panel is simple — power cable tail, that ghastly Belling Lee antenna socket, and an external speaker jack.

The mounting bracket for the FM620 has been upgraded slightly from the 320 — it is now slotted to do away with the necessity of dismantling the whole shebang and blowing a gasket trying to get it back together again. Much better, and it was all so very simple.

The color-scheme has been changed from basic black to a very fetching combination of greys, darker on the front panel than the case itself. The case is informed from a tough plastic, and fits together snuggly.

The push buttons which control the select call functions are located on the microphone — one for quiet mode select/deselect, and the other to transmit the tone burst. One point that should also be made here with regard to the multi position switches. On the FM320, a similar type of switch was used, but proved to be vulnerable to breaking off at the socks. Philips have improved the design on the 620, in that the stems of the switches are much shorter and are less likely to be knocked about.

So, outwardly the FM620 has inherited some of the features of its predecessor, but with a goodly dose of upgrading. It is easy to come to grips with the operating procedures — ten minutes "hands on" experience in conjunction with reading the manual will be more than ample time to get on top of it.

And now to the Sawtron 999.

If heavier is better, then this rig has got a head start. After its useful life as a radio, it should be seriously considered as a boat anchor or a door stop. The whole appearance of the unit reeks of commercial quality. Diecast casing which fits together immaculately; large heat sink fins on the rear of the casing; front mounted speaker, piggy back rotary controls; and a brilliantly designed quick release heavy duty mounting bracket. The overall dimensions are as near as dammit the same as the Electrophone, but wider and shorter than the FM620.

The front panel is slightly angled, and except for the on/off/volume/squelch piggy back control, is totally devoid of knobs. You have to be a button pusher to enjoy this one!

The microphone socket is a front-mounted screw type, and the matching connector on the mic. cord is angled down at 90 degrees. Despite the angled connector, it's still a bit fiddly trying to adjust the squelch control — the outer ring on the piggy-back knob.

To the left of the front mounted speaker, we find four rows of push butons, numbered from 0 to 9, plus * and "R". To the left of them again are four more keypads labelled "manual", "scan", "prio", and "tone".

There are two digital LEDs, which according to the instruction manual tell you what is hapening when you push the aforesaid keys. On the same panel there are other indicator lights which give you the status of the numerous functions which can be keyed into the CPU, plus TX and RX indicators. There is no S/RF meter of any sort.

Inspection of the rear panel reveals a power connector, and antenna socket, both on tails as was the Electrophone's. The antenna tail lacks the protective sleeve found on the TX472. There is also a jack for connecting the optional external speaker.

For the record, this unit has a remotable head, which means that the black box can be mounted under the seat, or where-ever. The only snag is the cost of the connecting cord — around $120 for the two metre job.

Naturally, the Sawtron 999 has provision for an optional select call, and the controls for this are located on the microphone. In summary, this unit is an impressive looker, exuding quality, and with obvious potential for the uncontrollable button pusher.

On the test bench we will try and make this brief, and touch on and only those points which we consider important.

The first of these is sensitivity. In this department, the Sawtron come out the best, with a figure of 0.17uV for 12 dB SINAD.

Investigating the receivers in each unit further, we found a vast improvement in the adjacent channel rejection figures for both the Philips and Electrophone units, as compared with their previous models. The Sawtron has always been excellent in this department, however, it was shaded by the 620. Using a 20,000uV signal into channel 20, it was impossible to detect this signal anywhere else over the 40 channels on the FM620. This is really commercial quality, and their claims made during the release of the unit were not a load of hype. Using the same test, both of the other units exhibited a slight leak through on several channels, but, their performance was still excellent — 20,000uV is one hell of a signal to keep at bay!

The operation of the squelch circuitry was also tested. The Sawtron has a different system to the other two — it's a two stage design which holds on to a weak signal, and then snaps shut. The Philips and Electrophone units are single stage, and exhibit hysterisis — they open at say 0.2uV, but stay open even when the signal drops lower than their original thresholds.

Of the three, we preferred the FM620 result, which tended to make

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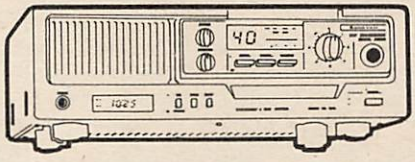

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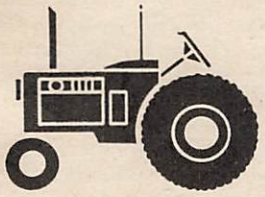

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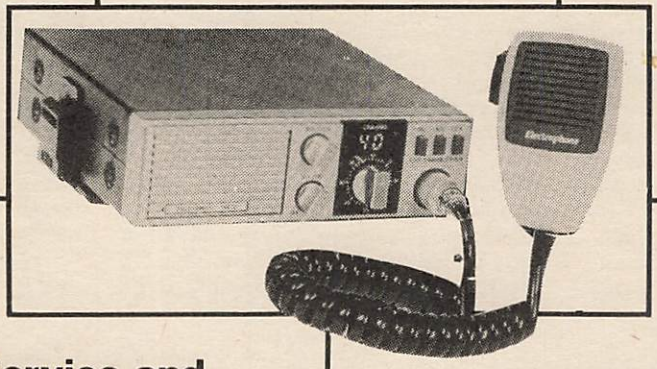

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listening to a fluttering signal much easier.

The recovered audio during an on air session varied greatly between the three units under test. The Sawtron and Philips both have a tone control, which enable you to cut the treble content of the incoming signal, which was just as well in the case of the Sawtron. Out of the box, with no adjustment the operator on the other end sounded suspiciously like a fishwife, or maybe his jocks were a tad on the tight side. A quick fiddle soon put things right. The Philips unit only has two settings for the tone control — on, and off. But in either mode, it was quite listenable. To quote our tech, "That's what I call commercial quality audio."

The Electrophone has no tone control, and we must say it doesn't really need it. The recovered audio was clear and pleasant, so the results of this part of the test were line ball, although initially it appeared that there would be a clear winner — until we used the adjustments available to us.

The results of the transmitter tests were also very close, with all three units displaying excellent characteristics. The power outputs were all virtually spot on the legal limit; the frequency error figures were likewise — Sawtron 400 Hz low, Electrophone 100 Hz low, and the Philips unit 200 Hz high — all within spec.

We ran a special test on each unit to see how they reacted to a "cold start" immediately followed by five minutes continuous transmitting, which generally shows up any tendency for a rig to shift frequency, lose power, and overheat around the final stages.

They all passed the test with flying colors. At the end of the test, the Sawtron was quite cool around the heat sink, the Philips likewise, and the TX472 a little warm, but still within acceptable limits.

The 620 did have one outstanding feature on transmit. The deviation limiting circuitry was absolutely superb, and distortion of the signal was minimal — it's obvious that Philips have also put a lot of work into this area. Both the Electrophone and the Sawtron were quite acceptable in this regard, but it was the 620 which really stood out.

On-air reports of all rigs were good, with the receiving station favoring the 620, as the audio seemed to have more "bite" with no excesses of bass or treble. Communications quality was the way he put it. The Sawtron audio was a bit on the "hi-fi" side, but much better than their previous model, and the Electrophone had a tendency to be a little sibilant. Once again, nothing to worry about with the 999 and 472, it was another case of the 620 being just a tad better.

## Circuitry

The honors were spread around in this section of the test. There is no doubt that the Sawtron board was the better finished, but it was fairly cramped. The Electrophone approach is vastly different to either of the other units, using surface-mounted components which has several advantages over the older style boards. There is less clutter, the weight is reduced, and reliability is enhanced. Philips have made a number of improvements to their board as compared with the old 320. There is better shielding of sensitive components, and the design has been improved.

In a nutshell, all three boards have merits and demerits, and it is difficult to make a direct comparison. The Electrophone board has superseded the other two in technology, the Sawtron is the more professional, but the Philips is easier to service. Take your pick!

## FEATURES

It is not our intention to go into fine detail on how to operate each unit to get the desired result — that could take another three pages. We will just give you a run down on what's available.

## Electrophone

As supplied, this rig is fairly straight up and down, and aimed at the user who wants a good performer without a whole heap of bells and whistles. Repeater functions are standard equipment, and the only options, you have are: Selcall, dual watch facility, and 40 channel scan.

## Philips

The pace starts to quicken. Once again, the repeater function comes as standard, along with: programmable-nominated channel selection on both simplex and repeater channels; scan all 40 channels; scan all repeaters (both with the option of scanning a nomination priority channel); electronic channel switching in both directions; tone control; selcall controls on mic; audible selcall buzzer. The only option available at the moment is the selcall unit.

## Sawtron

The repeater function comes as standard as does: full 40 channel scan (manual scan); memory scan — you can program which ever channel you fancy into the memory (both scans with a priority channel option); programmable tone code for selcall when fitted; programmable display brightness; programmable high/low tone; adjustable transmit time limiting switch. There is a wide range of options available, including; remotable head control kit; selcall (5 tone and CTSS); scrambler; and an AC power supply unit.

## Prices

The current recommended retail prices are: Electrophone TX472, without selcall $490, selcall $120 extra. Philips FM620 without selcall $499, selcall $100 extra. Sawtron 999 without selcall $770, selcall $120 extra.

## The nitty gritty

When you line up three top rigs like these, it all comes down to two things — how much brass you want to spend, and how many bells and whistles you want for the aforesaid brass — it's much like choosing a car. They will all get you from point A to point B, but at varying levels of comfort, and at different speeds. The Electrophone is a solid performer, straight up and down to operate, with a minimum of frills, but a maximum of circuitry technology.

The FM620 shaded the other two in overall perforamnce, is easy to operate, and throws in a few handy extras. Neat without being gaudy would be an apt description.

The Sawtron is without doubt the "trick" machine, but we found it tedious to operate. For instance, you can't back up if you over shoot the desired channel — you either have to get it the next time round, or go for the key pad. It is also necessary to run a program to get into repeater mode — and out of it. In short, you could spend a good half day learning how to drive the thing, and even then, if you leave your instruction manual out of the car, you could be in trouble, especially after a week away from using the rig. But, if you want top quality construction, coupled with the latest in available technology, you will love the 999.

Over and out.

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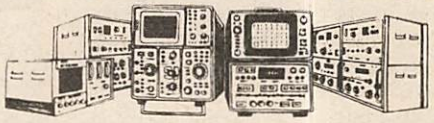

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# SYDNEY SCENE

By Steve Griffin

It seems like there is a perfect chance for some enterprising little company to put a descriptive information guide on to the market. Quite a lot of readers and new operators constantly ask me if there is any type of book available. The only publications that I've come across are: "CB Radio in Australia", which was last available from Sam Voron; "The Big Dummies Guide to CB", which was last available from Hatadi Pearce-Simpson, and "CB Radio Handbook", which was available at most Dick Smith stores.

Keep in mind that all these books are getting a little old, but generally, most of the information is pretty accurate, except for the channel charts, as they are based on the old 18ch system. A few minor changes and a bit of common sense could make some publisher a little money.

*(What about copyrights, Steve? Ed)*

Quite a lot of retailers don't seem to try to provide information on the various problems encountered by newcomers. All they do is sell the product, take the money and hope they don't get any questions.

Gentlemen, you are providing a communication service. You are supposed to be as helpful as possible if you wish to have a regular flow of customers. On numerous occasions people have given bad reports on certain retailers. Not only is the sales side a little worrying, but also certain on-air techniques which are used.

Admittedly, everybody gets complaints but, really fellas, pull the proverbial socks up and get serious. Contrary to popular belief, this form of communication is constantly growing.

That goes for you interstaters as well.

★ ★ ★

Take note all you regular buyers, this mag is going bi-monthly (that's every two months for all you good buddies out there) as from next issue. Just in case you haven't already read it somewhere else in this issue, there will be more articles and product news, and even some great little stories that will keep you coming back for more.

Also keep in mind that a readers' survey may crop up soon asking some questions about your thoughts on CB magazines, radios and general information on the sales and service side of things. Also, lots of details about the type of radio that the average CBer likes. Big companies like this sort of thing, don't they?

At long last the channel two repeater is finally operational on UHF. It has been dubbed the "Clayton's Repeater", when it wasn't really working, "The Leyland Brothers Repeater" when it was up and about changing location every few months — travelling all over the countryside and, in general, never really got any praise.

David Flynn and other members of the newly formed Blue Mountains Repeater Association set out to correct the system in general.

Firstly they purchased some new equipment — A Plessey MTR-54 unit complete with ident and all the necessary tricks, and then placed it at its new location in the Lower Blue Mountains area. From here it is accessible to users throughout the Greater and Outer West, and continued work is being carried out to further improve the coverage to meet the desired Sydney-wide target.

Another little story regarding the BMRA concerns a couple of the Western Radio Club's members who were kicked out of the club simply because the thoughts of the two groups didn't really click together . . . and, as someone else put it, 'The children didn't want to share their rattle, even though it wasn't been used'.

Anyway, the fact that it is finally up and running is what most find interesting, so congratulations are in order for all those responsible.

★ ★ ★

Aunty DOC is using a prototype of a new licence application form, in the North Sydney office for a trial period, to see if it will simplify things when applying for a CB licence. The form has its similarities to the original P&T form, however the brand name and approval number don't seem to be required. I might add that we may be due for an increase in fees as from September as well. It's hard to say at this stage if this form will be used permanently, but I bet that a few additions will be made before its release to the public.

Another little tip from DOC: when applying for a licence you must send the necessary fees — at the moment $12 — with your application or it gums up the works or, should I say, slows down the process.

Any further info on licensing, or why they shouldn't fine you somewhere between $2000 and $10,000, can be obtained from DOC (Department of Communications), Miller Street, North Sydney, ph (02) 922 9111.

★ ★ ★

Come on all you readers of Sydney Scene. Now that we are going to be around every two months, we need your views — this column is for you to use to air your news, events and happenings. Club meetings and outings can be publicised providing we know, so get in early.

Write now and let me know. The address is: PO Box 40, Gladesville, NSW, 2111.

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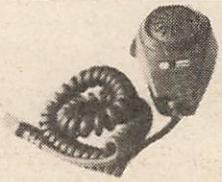

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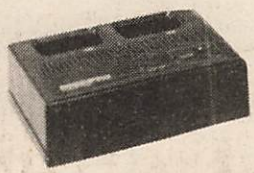

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# Queensland Scene

By ROD FEWSTER

My story on organized dobbing in the last issue drew a little bit of flak, and an enormous amount of support.

It appears that this type of slimy behaviour is even more widespread than I realized.

I've had congratulatory calls or letters from every state except Tasmania (maybe they don't read Queensland Scene in The Apple Isle) with a number of callers claiming that organized pimping was also common in their areas.

Even the Big Bird, Albatross Radio of Australia, is involved.

I quote from a letter from Albatross Radio of Australia to DOC which was published in the March 1986 issue of WAVE-LINK:-

"Over past years this Organization has tried to help the Department, where possible, upgrade and clean up the Citizen Band Service. In some instances we have given the names and addresses of offending operators to the Department in good faith."

The letter also states that "This information along with our names and Albatross Radio numbers was given to the offenders", and that " . . . our members and friends are still being subjected to harrassment from offending operators because they made complaints to the Department."

This I CAN believe. If you're a grass, you're bound to get a bit of aggro.

Although the Albatrosses, unlike the anonymous dobbing organizations, have publicly admitted to pimping on fellow operators, in the same letter they state that " . . . . we must be given positive assurance that any information we give is kept strictly confidential by the Department."

Could it be that they're thinking about joining the ranks of the Faceless Finks?

★ ★ ★ ★ ★ ★ ★

What's the big attraction with all this "cleaning-up-the-airwaves-by-dobbing" stuff anyway?

Are these make-believe Radio Inspectors really appreciated by DOC, or is the rumour that the genuine RIs regard them as social misfits who are just acting out their James Bond fantasies by tracking down and pimping on operators who don't conform to their own parameters of correct on-air behaviour more just a rumour?

★ ★ ★ ★ ★ ★ ★

There are a lot of CBers out there whose on-air performances make me want to throw up, but I don't HAVE to sit there and listen to them if I don't want to. Unless what they're doing or saying is directed at me personally, if it doesn't suit me I can flick the channel selector or hit the on/off switch any time I feel like it.

Like most Brisbane UHF/CBers, I cop my fair share of jamming and abuse. My usual method of dealing with this garbage is to either give the wankers a resounding on-air blast (not really designed to improve my already-fragile relationship with DOC) or to switch off and watch TV, depending on how I feel at the time.

Don't get me wrong. I'm not condoning button-pushing, jamming, music-playing, or out-and-out filth, but I'll be damned if I'm going to sprint off to the phone and pimp to the local RI every time someone says or does something on-air which doesn't meet with my approval.

★ ★ ★ ★ ★ ★ ★

Most of the creeps who jam up the repeaters or are foul-mouthed and abusive on a personal level are "mircrophone commandos" who disguise their voices in an attempt to avoid recognition. (When Plato or Pluto or Plonko or some other old Greek philosopher said a couple of thousand years ago, "Anonymity is The Cloak of Courage", he must have been referring to CB wankers.)

It seldom takes long to identify most of these insignificant specimens, and once their identities are made public knowledge they usually clam up real quick.

Some of the more persistent idiots are known to have been visited and spoken to unkindly by certain Brisbane CBers. I'm told they didn't like what was said at all, and would have preferred to have been busted by the RIs.

Maybe half a pool cue up the nose is not everyone's idea of "self-policing", but it sure beats the hell out of being a pimp!!

★ ★ ★ ★ ★ ★ ★

An Australian electronics magazine recently featured a very sophisticated radio direction finder project which is now available in kit form from a number of component specialist outlets.

While not quite as exotic and efficient (or expensive) as the Ocean Research gear used by DOC to track down illegal stations this unit works on a similar principle, and is capable of finding a walkie-talkie hidden in a drainpipe.

My spies tell me that this equipment is already being used by certain Brisbane UHF/CBers, in the spirit of "self-policing".

Watch out, jammers and foulmouths!! Next time you see a car with a funny-looking antenna array on the roof you may wish you'd filed the rough edges off your rig and coated it with Vaseline!!

★ ★ ★ ★ ★ ★ ★

It's been brought to my attention that a Brisbane emergency monitoring organization has an "arrangement" with a certain towing company whereby the organization receives a spotter's fee for information leading to a tow job.

It's common knowledge that tow truck operators constantly monitor police and ambulance channels, and obviously they'd all pick up an accident report from these sources at the same time.

If, however, one company was notified about an accident before the police and ambulance were advised, then they'd be off to a flying start, wouldn't they? There would be more chance of getting the spotter's fee, wouldn't there?

I'm not saying that this is happening, but the temptation is there.

Then we have the "sandbagging monitor", rushes off to ring his favourite tow truck operator. While both are away from their radios a mobile CBer sees a serious accident with badly injured victims needing immediate attention and calls for a monitor, but no-one answers.

THIS COULD HAPPEN!!

Get the dollar signs out of your eyes, and make up your minds whether you want to be monitors or VULTURES!!

★ ★ ★ ★ ★ ★ ★

DOC in Brisbane recently launched Australia's first successful prosècution under Section 23 of the RadCom Act for posession of illegal equipment.

An ex-SEQEB employee's pocket is a total of $832 lighter ($500 fine, $300 towards the cost of DOC investigations, $32 court costs) following his conviction on a charge of posessing an illegal CB radio and an illegal commercial transceiver capable of operating on SEQEB frequencies.

The prosecution was the end result of investigations into jamming and harassment during the recent power dispute. The CB radio was allegedly used to coordinate the systematic jamming of the SEQEB repeater.

Under RadCom it is an offence to even own a piece of equipment which falls into the "illegal" category, and this includes unlicensed CB radios. Now that the fines for not having a licence are starting to look like phone numbers, twelve bucks a year is cheap insurance.

★ ★ ★ ★ ★ ★ ★

I had a bit of a play with an FM620 recently and was very impressed with both the features and the performance. If only Philips could get the retail price down around the $350 mark they'd give the cheaper imported rigs a real run for their money.

Only one bitch . . . . they're still using that lousy antenna socket!! Philips use BNCs on their commercial range, so why not on their UHF/CBs? Even SO-239s (commonly referred to as UHF connectors and used by almost every other UHF/CB manufacturer, but regarded as a poor choice by some experts) would be an improvement.

Incidentally, those Brisbane UHF/CBers who have decided that the new Philips rig is a load of rubbish after listening to the horrible noise emanating from Brisbane's most-often-used FM620 . . . . . think again!!

This particular transceiver has been attacked ferociously by itw owner in an attempt to obtain extra channels/extra power/extra everything else, and any remaining resemblance to the original design is purely accidental.

★ ★ ★ ★ ★ ★ ★

Speaking of imported rigs . . . . . remember how the price of CB radios and accessories literally skyrocketed when the poor old Aussie dollar dived way down into the sixties last year?

Since that drastic plunge our dollar has recovered to the point where it's now over the seventy-three cents mark, and climbing.

Readers will be happy to hear that CB prices are about to drop substantially as importers make adjustments to bring prices into line with the strengthening dollar, and that pigs can fly, and that there are fairies at the bottom of the garden.

★ ★ ★ ★ ★ ★ ★

Brisbane UHF/CB's first (and so far only) scrambler user is copping heaps, from other commercial users. (I haven't heard a real CBer abuse them yet.)

Obviously those doing the abusing haven't taken into consideration that (a) the transmissions are scrambled, not just a deliberate attempt to interfere with the repeaters, (b) that the stations are legally allowed to scramble their transmissions, and (c) that the operators using the scramblers can't tell what the abusers are saying anyway.

The scrambled transmissions themselves don't disrupt the repeaters, but the ensuing ten minutes of abuse from all sides make a hell of a mess.

I can't see too many hobbyist users forking out three or four hundred bucks apiece to fit scramblers, which, by their very nature, are useless for general communications purposes.

DOC, in its infinite wisdom, has allowed the UHF Citizens Band to be almost totally annexed by commercial users, and the bull of scrambled transmissions will come from commercial operators with multiple-station setups.

Some Brisbane commercial operators are well-known for abusing hobbyist CBers who dare to stray on to "their" repeaters during daylight hours.

Now they can start abusing each other for using scramblers. With a bit of luck they might even start abusing themselves. (The few that don't already, that is.)

Whether you like it or not, scramblers are on UHF/CB to stay.

★ ★ ★ ★ ★ ★ ★

Things have been pretty quiet on 6/36 for a while, following warnings from DOC to both the organ grinder and his performing goat about their harrassment of other operators and generally disruptive behaviour.

Obviously this geriatric pair of buffoons think they're a lot smarter than the Radio Inspectors. They're starting to get up to their old tricks again, but with a difference.

Instead of deliberately jamming and using filthy language the idiots now break into the QSOs of operators they don't like and carry on extremely lengthy conversations with one another about imaginary boat trips, the weather in New Caledonia, how they won the war singlehandedly, Grandpa's prostate operation, why Swiss cheese has holes in it, or any other trivial pap they can come up with . . . . effectively tying up the repeater and preventing the disliked operators from continuing with their QSOs. (All very politely, of course.)

Previously, these clods used to orchestrate their harrassment on a simplex channel, but after being overheard and caught in the act, they now use the telephone to set the stage.

You couldn't find a better double act at the Sydney Opera House, but if you want to catch the performance you'd better hurry.

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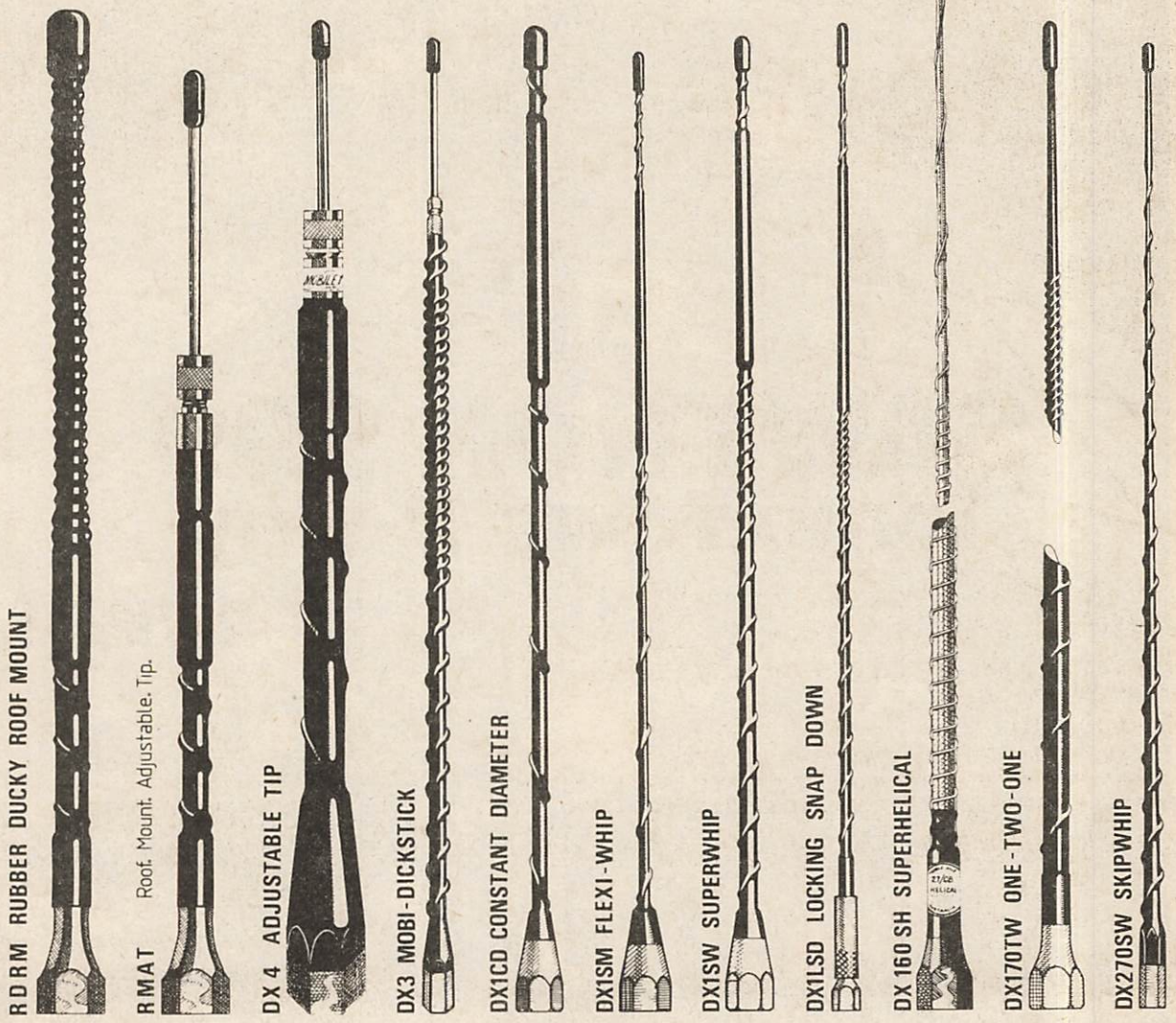


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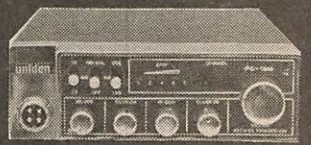


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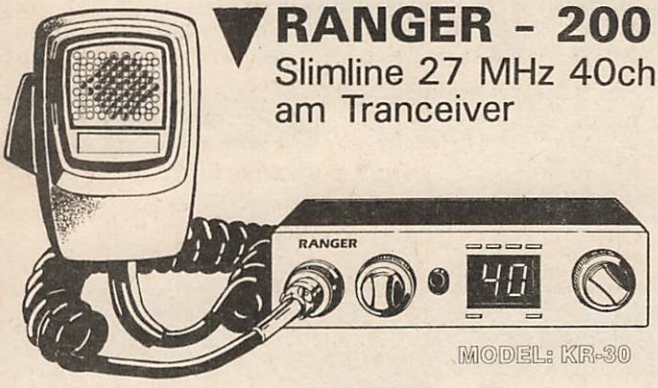


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am Tranceiver

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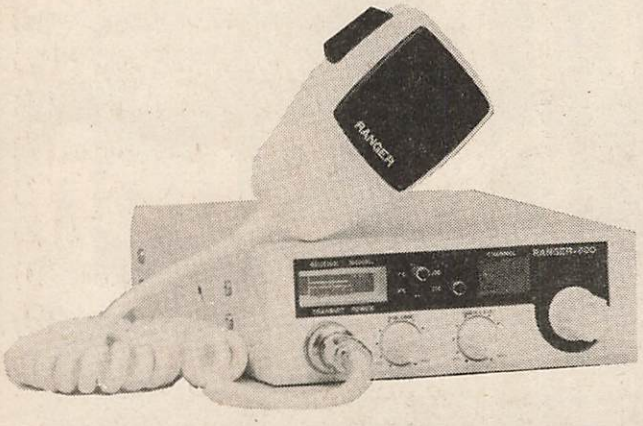


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| R | Y | E | S | E | F | U | N | O | W | E | G | O |
| G | O | T | C | Y | I | T | D | L | E | W | E | E |
| I | U | A | E | G | E | H | F | U | S | S | R | C |
| R | Y | E | N | S | D | V | Z | C | T | H | B | G |
| H | I | P | E | I | S | J | D | E | O | W | U | P |
| N | O | E | Y | R | F | A | F | C | W | O | L | U |
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The winer will be selected from all the correct entries which have been received up to and including the last mail on the closing date.

The draw will be conducted in the offices of CB ACTION on the closing date, and the results will be published in the September issue of CB ACTION.

The winner will be notified by mail prior to the publication of that issue.

I believe that the hidden words are:

1..... 3 words (9)
2..... 1 word (11)
3..... 2 words (8)
4..... 2 words (12)
5..... 2 words (9)
6..... 2 words (7)
7..... 2 words (7)
8..... 2 words (12)
8..... 2 words (9)
9..... 2 words (9)
10..... 2 words (11)

I would like to enter the CB ACTION/HATADI Wordmaze Competition. I agree to abide by the judge's decision.

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Get into CB with one of the finest sets around: the AM/SSB Hornet II from DSE. It's real value! With large, easy-to-read LED channel display and all front panel controls grouped for maximum user 'friendliness' you'll find the Hornet II satisfies the demands of every CBer — from the novice to the expert!

- DOC Approved
- Full 40 channels
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GREAT VALUE **$345**

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**PL-259 PLUG** Cat P-2310 **$2.10**

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### UHF Wattmeter Kit

At last a way to check UHF antenna performance! Build the UHF Wattmeter and you'll be able to! Measures forward & reflected power (50W max) and you can extrapolate SWR. Covers full UHF CB band. Cat K-6312

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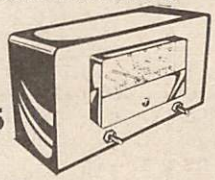

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**$2.75 per metre**

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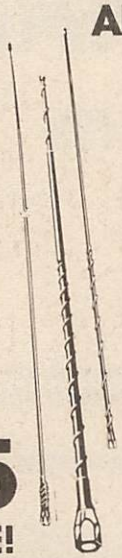

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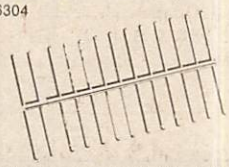

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B.199/JA

# OUT WEST

## By Don Stewart

My cry for help in the last issue prompted a couple of letters.

I had a nice note from TAI 311 Barbara in Launceston — Hi Barbara — she has been on CB for over two years and never got to read CB Action before, but says she will be a regular now. Good stuff Barbara — spread the word.

I also had a letter from ARA 216 John in Merredin who would like to hear less about UHF and ". . . more about the magic of HF — ie. 27 MHz."

John has been on CB for about eight years and he brought up a good point, which I quote:

"With the cycle almost at its lowest point HF is a bit droll admittedly. One thing that emerges too, that when skip conditions improve — shall we say greatly — we are going to find problems. In the past year the growth of AMers has been very strong and I think it's going to be a real hassle later. Also many operators chat quietly together in their own patch and nobody hears this now — but in 12 to 18 months time it's going to be a real struggle to get QSOs of substance, because of local competition who do not use callsigns or mention localities. Present conditions have created slack operations on air."

I couldn't agree more John. When I first came into CB it was bedlam. After a couple of years things settled down a bit and, by the time skip started to fade, we had some pretty good radio operators out there. Unfortunately these seem to have stepped aside and left the latecomers to their own devices.

Oh well, at least we now have UHF for local communication — and believe me you will be thankful for that. I can remember a time when skip was so strong that I could not talk to a friend of mine only 2 km away except by relay from the other side of the country. There were so many voices at signal strength six or more on every channel that his strength five was not discernible to me, but he was dropping nines on Sydney.

Start getting your act together kiddies, it won't be long now.

★ ★ ★

Although I agree with Mr Black (P.51 last issue) on the use of the 'Q' code in CB radio, I must argue with his interpretation of QRA, QRZ.

Almost all the 'Q' codes can be used as a statement, or changed to a question by adding (?) or simply by interpretation.

The Australian Amateur Radio Call Book (mine is 1983/84) lists the following in the 'Q' codes:

QRA What is the name of your station? (or) The name of my station is . . .

QRZ Who is calling me? (or) You are being called by . . .

I have always understood QRA to mean the name of the operator and QRZ to indicate the callsign so, by literal interpretation, "QRA, QRZ breaker." means "What is your name and what is your callsign breaker?"

But, as I said before, I agree with Mr Black — let's leave the 'Q' code for the morse addicts and stick to plain English. What's wrong with "Come on breaker?"

The Volunteer Fire Brigade of which I happen to be a member, moved into a new station recently — a big flash place with all mod cons — much better than our old tin shed.

Everything is right up to date now. Even our old siren has been replaced by a pager system — and therein lies a problem — only six pager units have been issued for a brigade with about thirty active members.

We are going to pass the pagers around on a monthly basis, but we can not expect that all six holders of the pagers will turn out for every fire call — for instance they might be out of the district for an hour or so, just when the call comes in.

Some members cannot take the pagers because they work out of town and can only attend a fire call if they happen to be home at the time. So the problem is, how to keep all members informed (and therefore involved) when they are available?

We will probably end up buying more pagers (with voice) at about $160 each, but even that will not be enough — we can't afford one each and all members want to be kept informed, when they are available.

Somebody suggested that we might get some cheap FM broadcast receivers and step them down to the same frequency as our radio and pager system (about 76 MHz), but another problem arose — who could live with the FM hiss from an unmuted broadcast receiver 24 hours a day? Sure, they could be modified by adding a muting system, and then add a power supply so they can run off the mains (batteries don't last long), and it would then be cheaper to buy a pager.

What we need is a circuit diagram for a simple FM set that fits the following specifications:

★ One fixed frequency (between 70 and 80 MHz).
★ A 6v to 9v circuit that draws less than 300 ma and can run off a cheap transformer.
★ Muted FM hiss.
★ Costing less than $50 to make.

Our transmitter puts out 25 watts and no receiver would be more than four kilometres from the transmitter.

Given the number of Fire Brigades, Bush Fire Boards, Ambulance and other services using these frequencies I am sure a manufacturer could sell thousands of sets like this, but all I want now is a circuit diagram. Can anyone help??

★ ★ ★

Time for another up-date on UHF repeaters in WA. Apart from those in the Repeater List in the last issue (page 67), we now have:

Albany — Channel 3/33
Denmark — Channel 1/31
Lancelin — Channel 4/34

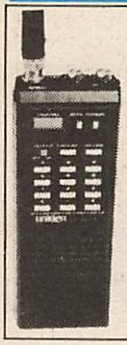
Mount Barker has changed from 4/34 to 7/37. (The callsign is still MTBO4).

All these, and those in the last list were working at time of writing.

I hear Manjimup might be next with 6/36, but it is not up yet. I will keep you posted.

# These new scanners will amaze you

**Captain Communications have the latest, most powerful handheld scanners. Prices too hot to print. Phone or write now for details.**



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❑ **Auto lockout** – program the scanner to skip channels.

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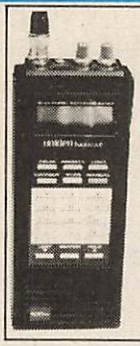
**AVAILABLE JUNE – CALL OR WRITE FOR DETAILS**



### Uniden Bearcat 100XL

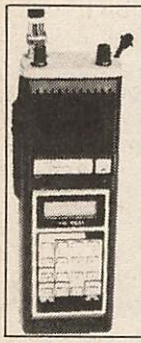
16 channels cover nine bands. Priority frequency is checked automatically every two seconds. The keyboard can be locked to prevent accidental programming.

❑ **Manual step-search**

❑ **Limit** – set upper and lower limits of search range.

❑ **Hold** – Stops on any frequency while searching

**AVAILABLE JUNE – CALL OR WRITE FOR DETAILS**



### Regency HX 1000

Tremendous performance from this top of the line scanner.

❑ 30 channel, 6 band FM Monitoring

❑ 30-50MHz, 144-174MHz, 440-512MHz coverage

❑ Priority channel

❑ Clock with backlight

❑ Scanning in either 5KHz or 12.5KHz increments

❑ Priority sample 2 seconds

❑ Scan delay

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The ultimate in VHF and UHF monitoring.

❑ 25-550MHz, 800-1300MHz continuous

❑ AM, FM (wide) and FM (narrow)

❑ General off-air monitoring

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### Uniden Bearcat 175XL

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❑ Channel lockout ❑ Auto search

❑ Auto/manual squelch

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❑ Priority channel checked every 2 seconds

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# YOUR CITY ELECTOPHONE STOCKIST

# '27 MEG NEWS'

By JOHN CAMERON

What was it that made the last issue of CB Action different from all the rest, even the monthly editions of 1977 — 1981?

Was it the continued over-emphasis on UHF CB (which this column is intended to rectify)?

Was it the fact that Rod Fewster actually said something interesting, useful or even loosely connected with CB radio, amidst his usual two pages of paranoid aggro ravings?

Was it the possibility that the March issue might not mention those heroes of hype, Sydney's Western Radio Club (known better in their home town as the 'Western Raffle Club')?

No . . . it was the first issue not to have the ever present tits 'n' bums cover! That's right — not an inch of exposed flesh in sight! Only the ugly pan of a Useless High Frequency radio.

Hope this issue returns to the traditional way of things!

**RUMOURS INC.**

Rumours just love to spread. For the past two years, everyone 'in the know' has been saying that the USA now has 60 channels. Some of these 'experts' even claim that the top 20 are SSB-only, VFO-controlled — or at least split into half-channels, with a 5kHz-offset that is programmed only to work above channel 40.

Pure garbage! A few years ago, all the Yank CBers were talking about this — but, like most Yank wanks, it was nothing but big talk. Now 27 MHz is pretty dead over there, nothing has changed, and the 'FCC forty' continues as before.

One good thing that's happened lately for HF has been the portable 'emergency radios'. Almost every major brand name has one, like a mobile version of a 40 ch. 5W walkie-talkie, with magnetic base aerial and 12 VDC cigarette-lighter adaptor.

This means that you don't have to install an entire rig, or put up with rubbish all of the time. When you head off on a trip along the highway, or get stuck and want to call for help, just unpack the emergency radio and plug it in.

Of course, some really keen guys are using them with battery packs, to make them into top-line handheld-portables. You may knock the walkie-talkie kids and pushbike-portables, but at least they're keen and interested enough to experiment with antennas and battery packs for their converted rigs.

If you've been reading the '27 MHz DX Techniques' series in this mag, you'll no doubt be itching to give it a try and put all those tips and tricks into action.

HF being a great social medium, as well as the ideal DX band for CBers, how about some of those wonderful and 'progressive' radio clubs getting a club DX award together, to get some more activity and DXing on the band?

There's only a few I know of at present that have these awards — but there should be much more. Basically, to get an award you have to contact a certain number of that club's members on air, and sometimes a few other DX stations per state. The best time for QSL contact with club members has always been during club nets and broadcasts. Let's give 27 megs a bit more life!

Back Stateside, the FCC is moving to totally ban the manufacture of linears capable of operating around 27 MHz. They're still around in great numbers, and being blamed for a lot of TVI, so the great American heater-hunt is on again!

I hope it never gets that bad over here. Most 27 meggers I know who have linears are aware of how to use them, and run as clean a signal into the beasts as possible. And they're mainly used in country areas, where the added range equals added peace of mind in emergencies.

But with the department snooping round more and more, its a case of 'let the operator beware'. Luckily, most of todays RIs don't have the ''us vs. them'' attitude of their once-masters, so there's a fair amount of leeway.

Been into your local CB store lately? About time we had a few new models and a better choice of rigs, and at last they're arriving. Pearce-Simpson have their new line-up, although its beyond me why they feel they have to change names and front panel layouts every six months. The Unidens are very neat and compact rigs, as are the new Ranger AMs. Good aerials like the almost-indestructible ZCG are a welcome sight, too.

Late news — my job with a multi-national company calls for a three-year stint in Canada, starting about the time this issue hits the streets. Editor Smith would like — I would like — someone to keep this HF column going. If you can write, type and walk around without bumping into the furniture — the job's yours! Cheers!

# Other 2-ways promise you the earth. We give you chips.

Silicon chips actually.

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All the chips' energy is routed into making the FM620 the ultimate two way in its class.

Philips have crammed it full of features, such as fast channel scan, super bright visual indicators, easy switch controls and a host of others that have to be seen to be believed.

What's more, this machine has been designed and manufactured in Australia. So you know that it's tough enough to withstand Australian conditions.

But no matter what we tell you about FM620, nothing will beat taking one for a test drive.

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PHIL 174

# UHF NEWS

By GREG TOWELLS

*Starting this issue, UHF enthusiasts have their own column. So, to begin with, I'd like to invite UHFers throughout Australia to contribute their own 'news and views'. If it is related to UHF CB — hints on experimenting or antennas, new gear, UHF club happenings and especially repeater news — then please let me know.*

*Alouthg UHF CB has been with us for over 8 years, it's still a very active band. More and more repeaters coming on air, new equipment being released, UHF-orientated groups — through this page, we can all keep informed on the 477 MHz scene. The address for letters is at the end of the column — I'll look forward to hearing from you.*

DOC TO SHIFT RPT INPUTS?

A recent rumour — DOC may be going to do something about moving repeater inputs to an out-of-band allocation, as everyone has been asking for all along. This is a clear solution to so many problems, and cannot be done too soon.

For a start, it will free the present inputs, channels 31 to 38, for simplex use. Maybe it isn't very crowded in the country areas, but UHF in the cities has almost no room to move.

Perhaps DOC can make it mandatory that any rig will only work in duplex mode on repeater channels, and likewise automatically simplex from channels 9-40. It will certainly eliminate the cretins who waffle away simplex on inputs.

And, as every rig will have to be mnodified, why not look at allocating channel 9 for repeater use as well? Again, repeater channels in some ares are getting crowded — why can't DOC plan ahead a little.

**HOUSE-TRAINED LEOPARDS**

Plenty of Leopard users were on the prowl for the 'Granada AM base consoles, after the March CBA project ('Housing The Leopard'). It makes a pretty neat and functional base, and certainly beats the massive prices for other manufacturers' base units.

One Melbourne CB store, sitting on a fair few of the Granadas and wondering what he was going to do with them, suddenly found they were sought after by UHFers all over the city!

**NEW GEAR**

Plenty of new UHF radios have appeared over the past months, but don't think it stops there. The GE UHF is still rumoured, perhaps to take over the mantle of the popular TX470 series in price and performance. There is a very big gap between the low-cost Uniden and the Electrophone/Philips price range.

There is also the shirt-pocket sized Electrophone TX-475 handheld, certain to prove a winner if it has overcome the lack of TX audio found in the TX-474.

**REPEATER PROFILE: BURNIE 8/38**

Callsign: BRN-08
Sponsor: North-West Coaat Radio Repeater Association, PO Box 953, Burnie, Tas 7320.
Site: Round Hill, Burnie, Tasmania.
Equipment: Kyodo KG-105BRS

The Association was formed mid-1983, after UHF CB users of Tasmania's north-west coast began to see the need for a repeater. The most frustrating problem was a suitable site — with security, accessibility, preferably power and definitely maximum coverage of the area.

The prime site was Mt Duncan, just south of Penguin, also used by the WIA for 2m and 70cm repeaters. The reply — a resounding NO! So much for co-operation from amateurs.

The final site was at Round Hill, Burnie — already crowded with radio equipment, and a real 'hot spot' in terms of RF. Launceston enthusiast Len Heyward supplied the site, and helped convince DOC that another 21W EIRP wouldn't make much of a difference!

With donations collected, BRN-08 began operation on October 6th, 1983 — less than four months after the Association itself was formed. They certainly had their act together.

The first BRN-08 unit was a Philips FM-828U, which never really got into top gear. After de-sensing, and problems with lightning and electrical spikes, the hut was broken into and the repeater stolen. The insurance company managed to back out of the claim, but — to their credit — the Association's members pressed ahead.

A Kyodo KG-105BRS repeater station was purchased, at around $3000, and has been rigged so that the repeater transmits a special tone signal if the hut is tampered with — it literally calls for help!

With an AEA diplexer, TX-RX cavities and a specialized lobe-pattern antenna, Burnie 8/38 is well patronised by local users, hobbyists and commercial operators. Quite a few businesses have joined the Assocation, which now has around a hundred financial members. It also maintains close ties with the North-East Repeater Association, sponsors of the central Tasmania 3/33 repeater.

Like the UHFAWA's Margaret River Channel 6/36 repeated in WA, it just goes to show what can be done if UHFers get together, work together, and put a little money where their sometimes over-active mouths are!

***If you've taken the time to read this far, then I hope you've found the column interesting. Remember, any letters and items — please send them to: The 477 Report, PO Box 358, GRANVILLE, NSW, 2142.***

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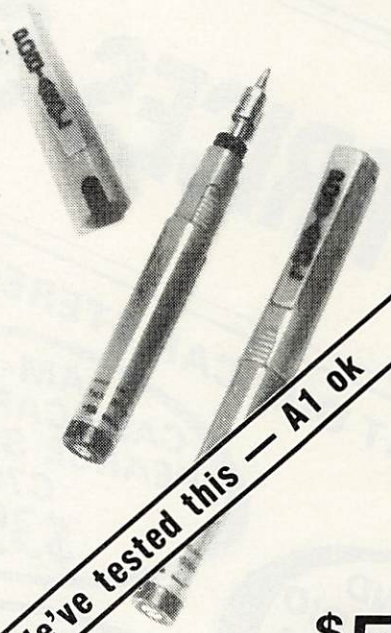

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# THE FUTURE OF UHF — ACCORDING TO DOC.

## By DAVID FLYNN

Have you heard the rumours doing the rounds on 477 MHz? About the expansion to 60 or perhaps 80 channels, or the introduction of 'out-of-band' repeater frequencies? Perhaps a move to allow additional repeater channels? Maybe that UHF CB rigs will be given an increase in power output, to 15 watts?

Well, welcome back to reality. The word from the Department of Communications is that they see 'no significant changes being made to the UHF CBRS in the short term.' And that's official.

Shortly before this issue went to print, CB Action received — in response to enquiries — what stands as the DOC's most public policy statement yet, on the future of the UHF CBRS.

Having defined a number of 'future options' for 477 MHz, as commonly discussed by UHF enthusiasts, we sought the Department's views on each option. These were given in reply by Mr John McKendry, Assistant Secretary of the Spectrum Policy and Planning Branch (Radio Frequency Management Division).

'At the outset,' said Mr McKendry, 'I should perhaps mention that we are quite happy with the way the service has evolved over the last eight years or so. It has developed into a highly utilised service which meets the needs of a wide range of social, business and rural activities at an economical price. It also uses a minimum of spectrum and is hence very efficient.'

DOC have always, in fact, been noted for their almost parental concern for the band, to their credit. It is an Australian original, and easily represents the best service of its kind in the world. UHF enthusiasts are also proud of this, and so have always shown an interest in the future of their hobby. In an atmosphere of misinformation, it is hoped that the DOC statement — and this article — will help to clear the air.

## CHANNEL EXPANSION

'In 1983/84 we did look at ways that the UHF CBRS could be expanded if required' said Mr McKendry. 'Although many options were examined, none were found to offer the advantages sought without significant changes being made to the CBRS spectrum allocation.'

One of these options, and certainly the most widely circulated, was the draft plan that appeared in the January 1983 issue of CB ACTION. This proposed an increase to 80 channels, and certainly came the closest to pleasing 'all of the people, some of the time.'

The first twenty-four channels of the plan were nominated as repeater inputs, from 472.025 MHz (ch. 1) to 472.600 MHz (ch. 24). Respective output channels were 5.2 MHz higher, from channels 57 (477.225 MHz) to 80 (477.800 MHz). This was designed to fulfil the Department's stated 'long-term' repeater plan, by removing inputs to a distant 'out-of-band' allocation.

Dedicated simplex channels were to be channels 25 (476.425 MHz) to 56 (477.200 MHz). However, only repeater channels 1 to 12 were for immediate use. Channels 13 to 24 were provisional, allowing 'the possibility of providing a further 16 channels for talk-through repeater operation should a future need arise,' quoting from the original draft plan.

Until used as such, these channels were to remain available for simplex use.

Other proposals came under consideration, the two most obvious having recently been resurrected by hopeful (if ill-informed) UHFers.

Simplest of all was a direct upwards expansion. That is to say, ch. 41 would be at 477.425 MHz (25 kHz above our current ch. 40). The band would continue to ch. 60 (477.900 MHz) or ch. 80 (478.400 MHz).

It sounded easy enough, and would have kept existing UHF rigs completely compatible with the new system. It could also have allowed for a new set of eight repeater channel pairs from 41/71 to 48/78, or could have been used to double the input/output spacing on existing repeaters.

The rationale for the entire idea was an indication given by former Liberal Post & Telecommunicatins Minister Tony Staley, in 1978. In his opening address to the annual conference of the now-defunct NCRA (National Citizens Radio Association), Mr Staley spoke of the need to 'look at a substantial increase in channels to the Australian CBRS ... a minimum of 80 UHF channels.'

It was never elaborated upon as to how this increase was to be achieved. Common knowledge favoured direct expansion to 478 MHz.

But, as anyone who's ever looked through DOC's AMFAR microfiche frequency listing can tell you, the nether regions above UHF ch. 40 are no less crowded than the rest of the UHF commercial band. In short, there just ain't room for extra channels!

The other most-talked about option was to halve the channel spacing, from 25 kHz to 12.5 kHz. An easy modification to most radios, which would give double the amount of channels in the same amount of space. And, once again, existing rigs would be fully compatible (just missing out on every second channel).

The experience of amateurs on the VHF/UHF ham bands, more crowded than UHF CB and using radios with higher power output, yet commonly only 10 kHz spacing, has demonstrated the claims that adopting the half-channel arrangement would still be workable.

The final word from the Department, however ... 'Both the 80 channel and half-channel options ... were previously found to be unattractive,' stated Mr McKendry.

## REPEATER CHANNELS

In response to questions regarding DOC's long-term repeater plan, Mr McKendry also made the Department's stand quite clear.

'Our previous investigation considered that out-of-band repeater frequencies should not be introduced.'

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## NO UHF CHANGES

Straight-forward enough. Next cab off the rank, then — the possibility of increasing repeater channels within the constraints of the present system.

Many UHF CBers have discussed the allocation of channel pairs 9/39 and 10/40, to alleviate what they identify as future crowding of the existing repeater channels in and around built-up areas.

The only real probem with this lies in the need to modify your current rig to work in 'Duplex' mode on channels 9 and 10. Of course, this would only need to be done if the local repeater was allocated either pair.

Minor difficulty — DOC's present recommendation of UHF ch. 40 as the 'Highway Channel.' Quick with a solution, the boffins call for relocating this to ch. 20.

But, says DOC, 'There is no current intention to increase the number of repeater channels.'

## LICENSING

Further to these areas, Mr McKendry also touched upon DOC's attitute to both unlicensed operators and 'ratbags.'

'The development of a service which is aimed at meeting the needs of the community as a whole is not without its problems. Of concern to the Department is the high level of unlicensed operation and the undesirable anti-social behaviour which exists in some areas.'

'A number of licensing campaigns have been conducted and in view of their success more of these are planned for the future. The anti-social behaviour has resulted in a number of licences being suspended. This course of action will occur when necessary in order to provide licenced users with the best service practicable.'

Mr McKendry ended by stating his department's developed policy towards changes to the service.' ... although difficulties do exist with the compromise nature of the UHF CBRS spectrum allocation, we believe that it would be unwise to modify the service unless absolutely necessary.'

'Rather,' he said, 'we continue to watch developments in personal radio overseas to determine whether the introduction of such services (eg Japan's high-tech 903 MHz band — DF) may become appropriate.'

## RESPONSES

Having been provided with DOC's clearest policy outline yet for UHF CB, a number of representatives from the 477 MHz community were approached, to contribute their own ideas on future directions of the band.

The UHFAWA claim that, 'on the West Australian scene, 40 channels are more than adequate.' The Association's Secretary, Mr Graham Ikin, said that 'Apart from the busy use of ch. 1/31 and 3/33 repeaters, other channels are relatively inactive. Of course,' he pointed out, we do not know what congestion, if any, occurs in the eastern states.'

Removal of commercial operations from UHF CB would be 'an unfair imposition on the small business,' according to the Association. 'But generally, we are happy with our lot.'

Peter Aitkens, operator of Sydney's ch. 1/31 repeater, said he could appreciate DOC's attitude to any expansion of the band. 'The amount of equipment sold would be far more than licences issued — I'd estimate over 150,000 rigs around Australia, but barely 15,000 licenced users.'

'If there aren't enough users of a service — and this figure can only truly be judged from licences issued — then, from a spectrum management point of view, it would be irresponsible to allocate additional frequencies to an underutilised service.'

'Rather than see DOC put effort into increasing the amount of channels, I would rather they put effort into increasing the quality of what we already have — that is, better policing of the band. There is no serious effort being made to deter the ratbags.'

'I would like to see,' continues Aitkens, 'some planning ahead for an additional group of channels, out of band, capable of being used as offset repeater inputs. This would at least mean that DOC's decision to continue with the existing repeater plan would not be irrevocable.'

He points out that this would involve a group of perhaps 10 spot frequencies, a few megahertz below the bottom of the band, which are left unallocated. 'Once employed, this would effectively increase the amount of simplex channels by almost 25%' he claims. 'It would also lessen the problems caused by simplex operation on repeater input channels, often deliberately done to tie up the repeater.'

Part of this idea is to increase the number of possible repeater channels. 'This is not as important for Sydney as it is for surrounding areas,' says Mr Aitkens. 'There should also be an effective bandplan for repeater channel allocations. Of particular relevance to Sydney is the use of ch. 1/31 in Newcastle — for at least half of the summer months, there is continual interference between the Sydney and Newcastle ch. 1/31 repeaters.'

'The need for additional repeaters in capital cities does exist' he stated. 'I personally believe that if an emergency repeater is not required, or not installed by a set date, then — subject to future allocations — a general useage repeater should be put in.'

'In Sydney, at least, an emergency repeater would be a big fat zero. There would be no need for one in Sydney if our emergency monitors had their act together.'

Certainly a controversial view! Peter also has strong feelings on commercial use of 477 MHz — 'UHF CB is the appropriate place for commercial operators, provided there is a strong limit on who uses it. It is most appropriate for the small business, the husband-and-wife team, and as citizens they have the right to use CB. I do object to operations where you've 30 or 40 mobiles — taxi-trucks, etc.'

I also spoke with Bernie Bischa, proprietor of Olbis Industries — Queensland's leading CB retailers.

'Channels?' says Bernie. 'We desperately need more, especially in the city, as well as country areas. The band is simply overloaded.'

DOC should definitely move to implement out-of-band offsets for repeaters, as soon as possible. We do need more repeater channels allocated to the city' he said, in relation to the DOC's limit of three general purpose repeaters in each capital city. 'Three repeaters is not always enough. Commercial operators, as well as farmers, are the primary users of UHF CB in Queensland. Commercials overload the repeaters.'

'In fact it's more a business and farmer band than enthusiast. The

## NO UHF CHANGES

UHF hobbyist market has died enormously in Queensland, 477 MHz is too boring.'

'On the whole, DOC should do a great deal more in policing the band. Revenue from CB licences as a whole — HF as well as UHF — is rather large, and too little is put back into the band. DOC should be doing more to assist in smooth operation of CB. The whole concept of the band as being self-policing is impossible.'

One group who certainly weren't pulling their punches was Victoria's Omega Radio Club. Both President Barry VBO-671 and Secretary Les VBW-395, launched several broadsides at DOC.

'The look at improvements to the CBRS in 1983/84 proved to be in the "too hard" basket, simply because they tried to over-kill the situation by doubling frequencies, and utilising some of them as input frequencies for more repeaters. As we remember at the time, no-one knew what to do with it all. No-one was ever told what the options were, what they were supposed to examine. What they should have done, and didn't, was to consult with the user en masse.'

'Their (DOC's) so-called licencing campaigns are only about 7 years late. Those who have their licences suspended have been very few indeed, considering the complaints made and the amount of information voluntarily given to the Department.'

Also of concern was DOC's 'adamant refusal to make radio licences available (and renewable?) at places other than the few RI's offices in each state,' which the club claims would obviously greatly alleviate the problem of unlicenced users, and increase revenue to the Department.

The club suggests that Post Offices could meet this need, and that any 'royalties' to Australia Post would still be offset by the over-all increase in revenue.

Finally, they slammed the 'negative and almost lazy attitude' expressed in the statement, as being 'very unimaginative for anyone purporting to hold the reigns of the band's future. Eight years ago, some positive and great thinkers put Australia in the forefront of world technology by introducing UHF frequencies to many services, not the least of which was the CBRS. Where are they today?'

Mr Greg Towells, co-ordinator of Sydney's Blue Mountains Repeater Association, said he regarded the allocation of out-of-band repeater input frequencies as being 'of utmost priority.' 'Our major concern is to eliminate the present in-band input channels' Mr Towells said, 'This would not only eliminate interference to repeaters from simplex use of the input channel, but would also free 8 channels — the present inputs, ch's 31 - 38, for simplex use.'

'I feel that if this was done, then there would be no need at present for an increase in channels, at least for simplex operation. Perhaps, in the future, there may be a need for one or two more repeater channel pairs in some areas, but this is not necessary yet' he claimed.

The DOC should also take steps to develop a repeater allocation plan, Mr Towells said. 'They need to formulate a plan for repeaters around the country, defining channels and coverage areas on a map, similar to the CRRA's bandplan some years ago. This should also help in replacing the present repeater limits (eg 3 general purpose per capital city) with a more flexible approach.'

Mr Towells also stated that he had no objections to use of UHF CB for commercial purposes, 'as long as they are educated that the CBRS is different to the regular business two-way channels. A commercial operator, when applying for a licence, should have this difference made clear to him, that CB radio is about sharing repeaters and channels. That's the only real problem with most commercials' education.

On a separate note, most people had very firm views against the use of scramblers on CB.

'I don't really think that scrambling is right for CB', says Bernie Bischa. It is especially bad for repeater channels, bad enough to have 'hogs' on each channel. Scrambling means an inability to hear what they're even talking about.'

The UHFAWA is especially set against scrambling, calling it 'the most important issue we have before us.' It blasts the 'ridiculous legislation', and claims that 'if these devices get a hold on the CBRS it will cause the demise of our radio as we know it.'

The UHFAWA has already been active in the campaign initiated by the Omega Radio Club to overturn scrambler approval for the CBRS, and has committed itself to, if necessary, raise a petition to lobby Canberra to outlaw scramblers on CB radio.

Also making itself heard on the issue is the Aust. Association of Citizens band Radio Operators — ACBRO.

In commenting on DOC's recently circulated discussion paper on radio-communications privacy, ACBRO stresses that 'the introduciton of scrambled messages will only further confuse . . . the frequencies. The Association strongly believes that the CBRS licences should be allowed to have the capability to transmit encrypted messages.'

'Encoded transceiver devices should only be allowed for vital security and commercially sensitive messages. CBRS licencees do not fall into these categories, and if there is a need for privacy, the telephone or other radio frequencies should be used.'

BMRA Co-ordinator, Greg Towells, says that 'UHF enthusiasts must act to eliminate scramblers from the CBRS before they become widespread. They will lead to an increase in undisciplined operation, causing interference with operators using legitimate voice communications.'

Since their original letter of protest to the Minister for Communications (printed in 'Back To You,' last issue), the Omega Radio Club has received a reply from the Minister, Michael Duffy. In this, the Minister re-iterates the fact that 'privacy equipment should have been used only for the purely confidential parts of the message.' Furthermore, that 'The CBRS is a public resource ... all channels are available to licenced users ... in view of this, the use of speech privacy devices was permitted in the CBRS provided they did not affect the nature of the service.'

By the way, the Omega's did a fair job of getting the Minister's ear to this one, it seems. Not only did they forward copies of their protest letter, with background info, to various UHF-oriented groups, but they also arranged for some personal representation to Mr Duffy by Ian Macphee, the Opposition's Shadow Minister for Communications.

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# CAPTAIN COMMUNICATIONS

David Gills' career in electronics started at an early age, experimenting with valve equipment such as short-wave receivers. After a successful foray into the field of computers and EDP data administration, he co-founded the Australian company IFTA, which was later to become Benelec.

'Benelec was one of the first three companies to import CB radios into Australia' says David. This was the Aimor 23 ch. mobile AM rig, months before the popularity boom that set CB radio on the path to legalisation.

Once CB radio was established, with numerous dealers becoming involved, Benelec began to develop accessories such as mobile antenna bases, cables, plugs, antenna and microphones.

'Once this was done, you could quickly see that these items could be adapted to suit a broad range of communications' said David. 'We used a number of manufacturers, before deciding to make products ourselves. Benelec then became a producer as well as distributor, and gained contracts supplying these accessories to companies such as Philips, AWA, Plessey and Wormalds Communications.'

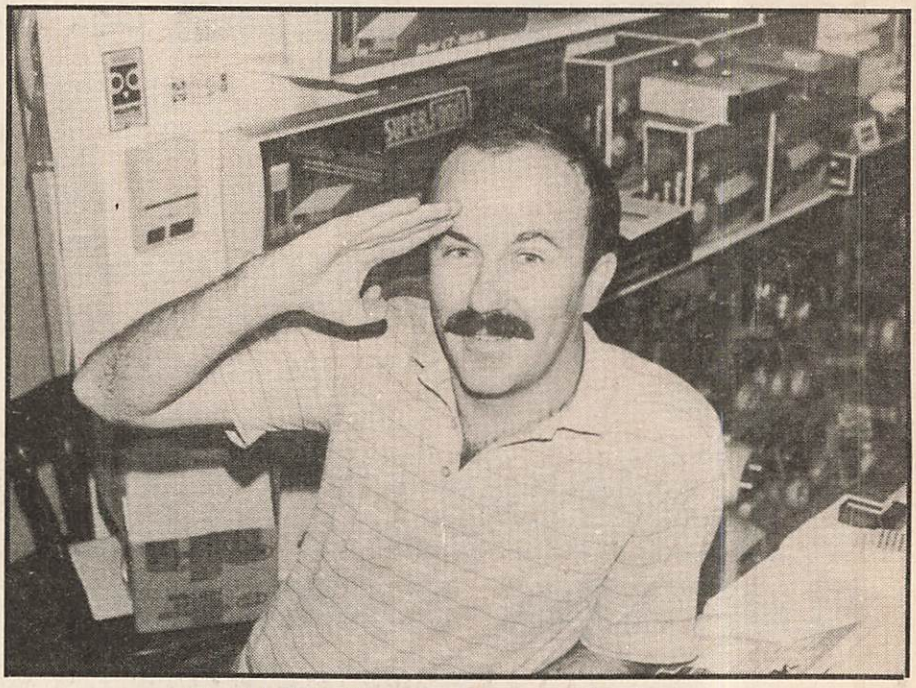
Captain Communications was many years in the planning, and developed out of a desire to establish a store that was a communications specialist.

'I had found in dealing with CB shops through Benelec that most people had very fixed ideas about what they should and shouldn't carry. The sad story to this day is that the way to get more sales is to discount, not to promote or look at new markets.'

Captain Communications, then, was to become a specialist in all aspects of communications, and increase sales dominance by both active promotion and development of new market areas.

Joining forces with Graeme Reberger, who established Just Communications and would have to be one of Australia's longest-serving retailers, David Gill commenced Captain Communications in June 1985 — and, says David, 'we have very quickly become one of the leading retailers in the industry.'

The David Gill philosophy continues to expound that radio is a specialist



***David Gill, Captain Communications***

field. 'We designed a store that would cover all communications systems — two-way radio, in all bands — 27 MHz and 477 MHz CB, commercial VHF/UHF radio — supply of base stations and total systems.'

The company has recently began signing up users to their Sydney UHF commercial repeater. 'Located at Kurrajong Heights, right at the top of the Blue Mountains, we can offer coverage of greater Sydney and beyond, in all directions' says Gill.

'So the whole communications needs of any business — radio, telephones, answering machines, pocket pagers, even a Viatel access package — can be supplied.'

Captain Communications also emphasizes service. 'Anyone' says Gill, 'can sell boxes over the counter. But not many can put the whole package together, give the customer time and the right advice.'

He also refuses to sell anything on which the store cannot carry out warranty work. The shop does all its own servicing and checks all equipment on the workbench before it is sold. The store's technicians are also available to talk to the customer and help solve any problem. 'The customer', quotes Gill, 'is number one'.

How does David Gill see CB radio, and the general future of communications in Australia?

'27 Mhz is totally saturated in cities like Sydney. It has excellent qualities for the traveller, truckie, and 4WD user. For companionship, road safety, car-to-car contact in a convoy situation, 27 MHz is ideal, and should remain forever.'

'It is over-priced, but *not* because of importers or dealers margins. This is due to unjustified duties on the gear as it enters the country. There is a sales tax of 20 percent which is fair enough, but an import duty of 30 percent! Now this is totally wrong — the only reason for a tariff is to protect local industry, and as we all know there is no Australian manufacturer of 27 MHz equipment.'

The reason for the tariff, he claims, is only for one radio — the locally-made Philips FM620 (and its predecessor, the FM320). 'That's fine for UHF CB, the tariff is justified in that case, but there are obviously two very distinct markets — 27 megs and 477 megs. If Philips decide to locally manufacture a 27 MHz radio, then well and good, slap on a tariff. But *not* because they make a UHF radio.'

Gill also sees 27 MHz as being an interest for young people, and one that leads to great benefits for the country.

'Younger people begin on 27 MHz, and then perhaps graduate to UHF CB and amateur radio. The majority of people using CB radio are interested. They want to buy good gear, know how it works, and there is a strong desire in the majority of CBers to learn more. And so many people have gone from CB and amateur radio into a career in radio-electronics. If you can flavour the imagination of the young with radio, and they develop into communications, their career is assured.'

As regards UHF CB, Gill also has some broadsides to fire.

'When the UHF bandplan was released, it was always the general understanding that DOC would allocate sufficient space on either side of 477 MHz for expansion. But since then, the department has come under pressure from the commercial users to allocate more space, and pressure always wins in political circles.'

'So DOC has lost any possibility of having 477 MHz expand, because of this. If the CB community was stronger, if the clubs were more organised and less factional, then more pressure could have been brought to bear on the Department to actually keep some area available for future expansion. All the equipment on the market today is quite capable of expansion.'

'But, unfortunately that's the story, UHF will remain as is — no further change. The general CB community probably owes a lot to it's own ineptitude.'

The remainder of the scene (the world according to Gill?) is 'more and more people sitting on personal computers, and linking up through Viatel — communications via electronic mail.'

'Viatel, in terms of acceptance and market penetration, not to mention growth, leads the world. Because of the vast distances one has to communicate across, it has taken off tremendously. I can send a letter to someone in Perth in 10 seconds flat, if they have Viatel.'

'And there's cellular radio, something we want to be right "in" on when it commences. In the future, I can see satellite communications being very much available to the public.'

'In fact, at the moment, my only frustration is that there are not enough hours in the day to do all the things Captain Communications could be involved in. We are very much market-oriented, and so we keep going out and finding what the market wants. But in order to get that, you must keep the market informed, which means technical advice, catalogues, newsletters.'

Since its beginning a year ago, very much a one-man operation, Captain Communications has expanded its staff to include two qualified technicians and a number of "occasional's" and part-time regulars. Still, David maintains, the customer comes first.

Is there anything else Mr Gill would like to see in the profile?

'More sex. Plenty of sex. I'm not getting enough!'

If you're around Parramatta, pay a visit to Captain Communications. David, Allen, Jack, Greg — there're all ready to help you.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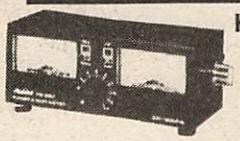

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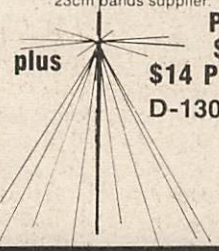

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D-130

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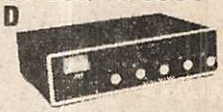

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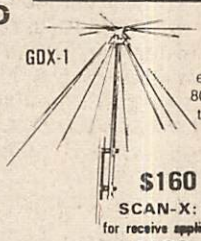

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# DOWN SOUTH

By Robert Adams

G'day. Much to the regret of some people on CB, I am not dead! The reason for not having a column in the last issue was simply lack of news, and filling just a quarter of a page was not really worth it.

★ ★ ★

Firstly, the Rob Adams "Quiet Achiever" award goes to REACT, an emergency monitoring group with it's headquarters in Murray Bridge. REACT is an organisation which monitors the emergency channels on both 27 Mhz and UHF. They also have a marine rescue service, back up communications for the Murray Bridge SES and are quite active in the community.

★ ★ ★

HELP! As you know CB Action is going bi-monthly, and I need people to write to me and tell me what's going on. It is impossible to be on air 24 hours a day seven days a week, and cover the whole state. My reliable receiving range is mostly from Elizabeth through to Glenelg and Norwood, so anybody outside that area — I can't hear you! It's hard enough trying to get a column together once every three months, so every two months is going to be even harder. Get the picture. . .

Gee, it's great being famous. Here I was on one of my rare trips down to Noarlunga. I was talking to another station when we had a breaker, through the usual routine, and as soon as he found out I was on the channel the response was "Oh your that ★★★★$%&★ that writes for CBA". He went through the usual stuff like "Why don't you write about this, or about that," and as soon as I ask him to write in and tell me, he says "why should I".

That's called apathy I suppose.

★ ★ ★

There doesn't seem to be much happening on the club scene around here or if there is nobody had told me about it. One CB club informed me that they were holding a car rally, but it was being held in the beginning of May. With this issue not due out to July then it is not much good, telling you about it, but that's the kind of news I need.

A few groups for CBers to listen into, or join in. There are some good discussion groups around for instance the Trans-wworld Radio group, who hold an "on air forum" every first and third Thursday of the month — that's fortnightly for those who can't count! It is conducted on a channel between 16 and 22 American, LSB starting at 7.40 pm and finishing about 9.30 pm local time. Notice is given on 16 and 35 at approx 7.30 to inform you as to which channel will be used.

The second group worthy of your attention is the Association of Citizens Band Radio Operators, ACBRO, who run a discussion group on the first Monday of every month between channels 16 and 20 at 8.00pm. They also have a group discussion on UHF.

Last, but not least, is the Lotus group who have their discussion every Wednesday night between channels 16 and 20 at 8.00pm

All these discussions are worth participating in, and you can actually learn something from just listening in.

All these discussion groups operate on LSB — as yet, I have not heard of a discussion group, using AM only.

★ ★ ★

I've been trying to find out what happened to the people who were blocking the call channels last year, but no information has been forthcoming. DOC in Canberra gave me the run-around, and Adelaide couldn't help.

★ ★ ★

An interesting point was brought up by the Humber 1, Sedan. It seems that there are 15 "station-master" antennas in Ingle Farm, with him in the middle. He thinks that this might be a record, so if you know of a larger number in another suburb, write and tell me. We'll try and find the most populated area, CB wise in the Adelaide metropolitan area.

★ ★ ★

Come on South Australia drop me a line — it's your column.

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# 27 MHz DX TECHNIQUES

***The second in a two part article setting out the techniques which will help the avid DXer pull in those elusive long distance contacts. With the Sunspot cycle at its lowest point, you will need all the help you can get!***

By DAVID FLYNN

## 27 MHz ANTENNAS

HF CB antennae are categorised by their size, in relation to the wavelength of the 27 MHz signal — 11 metres (36 feet).

The simplest store-bought base antenna is the ¼ wave ground plane. This radiates much of the signal at a high angle, which is reflected back from the ionosphere just as sharply, and only enables a comparatively short distance to be covered. There is also a large amount of low-angle radiation, for local coverage via the ground wave. This ground wave is up to 50 km in rural areas, but much less in built-up regions. The ¼ wave antenna is much smaller than the others, at about 9 ft.

The ½ wave antenna — either in 'ringo' or vertical 'station master' style — provides a good compromise between local coverage, and low angle radiation for DX. This allows a signal to travel further before reaching the ionosphere, and so covers a greater distance. A bit more unwieldy than the ¼ wave — this aerial reaches to 18 ft.

Top of the line is the ⅝ wave — potentially the best for DX due to the large amount of low-angle signal. The only drawback is the size, a lofty 7 metres!

These antennae are all 'vertically polarised', as are mobile aerials. Horizontal systems (many home-built) are used to minimise vertically-polarised noise and interference and some 'dual-polarity' base antennae have been popular items amongst DXers.

That's a very brief intro to omni-directional antennae. Directional sticks include the beam (or 'Yagi' as it is sometimes called) and the 'quad'. These are rated according to the number of elements and the antenna's 'gain' over a dipole (measured in decibels or dBs).

A directional antenna, of course, concentrates your signal in a desired direction, giving you added range. It's like comparing a standard light bulb to a flashlight. The bulb (omni-directional antenna) radiates light (your signal) equally in all directions. A torch (beam or quad) produces a narrow and stronger shaft of light, which can then be aimed in any direction. Directional antennae were illegal under previous CB regulations, but are now permitted. They are much more efficient in general CB use than the standard aerial, and can help avoid TVI by directing the signal away from the troubled TV set or antenna.

If you only care for DX, then a directional stick may be all you need. Point it in the right direction, and away you go. Otherwise the best option would be for both types of aerial.

Before we finish, an observation or two that may be of interest.

In discussing DX and the ionosphere, we dealt with the importance of low-angle radiation for the best DX range. This was in light of the single 'hop' from antenna to ionosphere and back to earth. But skywaves aren't restricted to just one return journey.

The signal can return to earth, only to be sent back up to the ionosphere for another reflection, then once more head 'home'. This adds extra reach to your transmission, and is called 'multi-hop'. It is quite common, too. And is another case for low-angle radiation.

Each time a signal is reflected from the ionosphere, it loses some energy. High-angle radiation requires more 'hops' to cover the same distance as a low-angle signal. Thus, the lower-angle signal will be stronger and clearer at the end of the trip.

## ANTENNA SYSTEM MAINTENANCE

Being aware of the need to esure your rig is at its best in order to get the most out of your time DXing — ask yourself 'Why should different rules apply to my antenna system?'

A bit of time spent on your antenna and co-ax can produce astounding results. And here's the best bit — unlike the rig tune-up, an antenna overhaul can be done by anyone. What more could you ask for.

Start with the co-ax, the lifeline between radio and aerial. Check the cable run for sharp bends and kinks. These can cause problems as the co-ax ages and deteriorates. If you have excess cable, don't 'coil' it — in fact, use as short a run as practical.

Are the connectors correctly fitted? Not just a 'dob of solder' job but a neat professional and solid join? Remember, the antenna plug will be out in the wind and rain, heat and cold, while you stay warm inside. Can your work stand up to the time and conditions?

Check the continuity of the run with a multi-meter, and re-do any doubtful joins. At the antenna, seal the plug with Silastic or a similar waterproof electrical sealant. Cover the entire plug and about the next two inches of the cable as well. This prevents moisture from entering the line, which can ruin an entire length of co-ax.

Ever cleaned an antenna? I mean physically given it a good scrub down? Well an aerial is meant to radiate and capture electrical energy which can be

inhibited by grease, moisture, oxidisation and plain atmospheric grime.

So clean them off. Even with a new antenna, you'll be surprised how much 'muck' can be removed. Imagine how much industrial smog has collected on your aerial over the past few years.

The tools for the job — a bucket of warm soapy water and steel wool. Go over each section of the antenna and at the end of the operation check that all strands of steel wool are removed, especially around points where it could cause a 'short'.

Regular maintainance is recommended. Every year, or even less, go through the entire process again. Clean the stick, check cable and connectors — it doesn't take long and it's worth the effort.

## ACCESSORIES

DXing is a specialised pursuit, and there are a number of accessories available that may (or may not) be useful. The more popular of these are listed below.

**Power Microphones**

These are designed to amplify the audio (speech) signal input to the rig. The object is to increase the clarity of the transmission and thus its effective range. In other words, it adds 'punch' to your signal. The danger with most power mikes (more the fault of the operator) is over-driving the amplifier. The result is over-modulation, leading to 'splatter' and TVI. While the power mike is among the most common DX accessory, it is also the most misunderstood and misused.

First step in buying a power microphone is to make sure you really need one. Maybe your rig is just low on modulation, needing a tune-up. If it has a 'Mike Gain' control, learn how to use it and conduct a few tests to find the most useful setting. Winding it up 'full bore' only causes distortion and overmodulation.

If, after all this, you still choose to run a power mike — choose one that matches your voice and your rig. Some mikes will suit one radio well but not another. Then make sure you know what settings to use.

**Compressors**

Used correctly, a great addition for DXing. A voice compressor is used to lift the average level of a signal, flattening out the extreme peaks that are found in sideband tramsissions. Many power mikes use compression but all voice compression devices must be set for both the user and the rig.

**Pre-amplifiers**

Also known as 'Signalisers', the pre-amp acts as an extended RF gain control, to increase the level of a received signal. Pretty much like a linear amp for the receiver, but — unlike linears — the pre-amp is legal! A variable control acts to set the 'gain' level.

The pre-amp can be invaluable in working weak DX stations. However, they will also increase the amount of noise present — most often this is atmospheric 'hash' but all background noise — including other stations — will be amplified.

**Linear Amplifiers**

Okay, they're illegal. But some people still use them. It's your choice, but the risks are high — especially under the new Radio Communications Act. If you decide to take the chance and use a linear, bear in mind the following.

A linear amplifier does exactly what it says — it 'amplifies'. It reproduces a transmitted signal at many times its original power, often far exceeding the legal limits. But it doesn't clean up a signal — just boosts it. Put in a filthy signal, and you'll get one perhaps ten times as bad going up the antenna. So make sure your rig is clean with a minimum of harmonics and potential interference-causing emissions. Even so, you may find that a fairly tidy signal at 12 W becomes pretty gruesome at 120 W! Result — TVI, BCI, splatter, talking toasters . . .

The output figures attributed to linear amps can easily be misunderstood. For a start, the quoted output power relates to a set input level. A 100 W linear may require 20 W input to drive it at full level. Supply only 12 W and your output may be as low as 60 W. Overdrive a linear — such as an 8 W AM signal where only 5 W is needed — and you've returned to problems of distortion and poor signal quality.

Finally, the total output power — even when fully driven — is often less than claimed.

Value-for-money might be represented in 'bi-linears' which have an RF pre-amp (with a fixed gain) built in.

## OPERATING TECHNIQUES

There's two ways to chase DX — legally or (you guessed it) illegally.

To run within the law, you keep to standard power, standard 40 channels. Of course, 35 lower sideband is the 'adopted' DX call channel — but this is not covered in the regulations, so it can't be forced upon anyone.

In observing the bandplan, keep the SSB above ch. 15. AM operators have as much right to 'their' channels (ch. 1=14), as sidebanders have to ch. 15=40. A chance for DX isn't enough reason to use SSB on a AM channel unless you want to justify the actions of AMers who operate on the SSB channels.

Then again, you can work DX outside the rules and regs. You pay your money, and you take your chances. Most everyone who wants to work illegal DX will be found in the upper half of 27 MHz, of course. So avoid other allocations, such as the New Zealand 26 MHz channels. If they want to talk to you, they'll meet you 'upstairs'. Steer clear of the marine channels (27.860 upwards) you've still got plenty of room!

No matter which you choose, the rule for successful DX operating is to listen, not talk. If everyone is calling, then how on earth do you expect a DX station to be heard?

Sure, put out the odd, short call to let 'em know you're out there. But nothing is more painful and boring than the endless drone of 'CQ DX, CQ delta X-ray . . .' every minute (or less!).

What are the essential elements of a DX call? First is the indication that this is a call for distant stations only, and not a general call (for any local to answer). Hence, the 'CQ DX'. Of course, calling for a specific area can be easily done, such as 'CQ Tasmania'.

Next, your callsign — logical, isn't it? Callsigns range from licenced calls through to alpha-numerics such as 'Sierra X-ray two-one' (or '21'). There are also club callsigns using phonetics (as before), or a more defined club name (such as 'Canberra Radio one-four'). 'Unit' numbers — often the same number as the DXer's post office box — are also heard. The simpler and clearer the callsign, the easier for a distant station to copy it.

Next element of the call is the location. In general only two qualifiers are needed here — the main area of operation and the country. Sometimes the state is included — it is a matter of preference and circumstance.

The specific suburb isn't required. After all, what's the sense in saying you are from '. . . Parramatta, Sydney, New South Wales, Australia? It's DX you're after — and a far-away station doesn't care for exactly what part of Sydney you're in — as long as it's Sydney, that's enough.

Small country regions may care to use the state reference, but most Australians would know what state Sydney (and other major cities or towns) are to be found in. And an overseas station only wants to hear the 'Australia'. So in many cases, mention of the state is unneccessary.

The most general call probably wouldn't even qualify as a call. 'The Sierra X-ray 21, Adelaide, Australia, on channel' says everything you'd need to know. It announces your presence to distant and local stations with equal

brevity — part of the key to DX calls is keeping them short and concise.

In some cases, where the same town name exists in different states it requires a little more thought. Anyone from Perth, Tasmania (just to the south of Launceston) would probably be better off calling CQ DX . . . from north-west Tasmania'!

Apart from a call every once in a while keep both ears scanning through the noise, for that distant station. When you respond to a call, ignore the tendency to shout into the mike. All those careful level adjustments on your rig or power mike are set for the everyday speaking voice. So you want to overdrive the mike and stop the other station from making any sense out of your reply? Yell to your heart's content. You want to add his QSL card to your collection, chalk up another DX contact in the log-book? Speak slowly, clearly.

The usual rules and good on-air procedure don't go out the window when the DX comes in. Courtesy, commonsense, consideration — you'll win more friends and life will be a whole lot easier.

QSL cards? Not mandatory for the DXer but a nice trimming if you're into that sort of thing. If you don't have QSL cards don't tell your contact that you do QSL just to get his card.

Cards can be prepared by the local printer or bought from some CB retailers and print shops. Some radio clubs have their own QSL cards available for members purchase.

## PROPOGATION PREDICTIONS

One of the more reliable indicators of DX are the propogation predictions printed in CBA. Adjusted for 27 MHz, these provide a reading of the expected DX potential between Australia and major countries over a full 24 hour period. A monthly version of this chart, scaled for the HF amateur bands appears in each issue of Amateur Radio Action.

## TIME ZONES

It is most useful to be familiar with world time zones and Greenwich Mean Time (GMT). This is also known as Universal Time (UT), or 'Zulu' (read as '0900 zulu').

The Australian time zones are also easily learnt. There are three local zones detailed below:

The Eastern zone observes Eastern Standard Time and Eastern Summer Time. Both are referred to as EST. This covers Queensland, NSW, Victoria and Tasmania. EST is normally 10 hours ahead (written as +10) of GMT. In summer this is adjusted to +11, except in Queensland (where daylight savings is not followed).

The Central Zone (SA/NT) observes CST. Normally at +9½ hours (ie, ½ hour behind EST and is +10½ in summer (except for the Northern Territory).

The Western zone (WA) observes WST and remains at GMT +8 hours throughout the year.

## DX-PEDITIONS

It's all very well to try DX from the comfort of your own home. After all, you've got 240 V on tap, a solid base antenna all tuned and ready to fire up- . . . but unless you live in the country you've probably also got much more into the bargain. Like electrical and industrial noise, lots of atmospheric hash and, of course, all your fellow operators — all crowding out the distant signal.

This is just too much competition for the weak (or even moderate) DX station. Sure at the peak of the cycle DX can come crashing over the top of the most local contact. But for the time being you've got to accept that Mohammed might have to go to the mountain (literally!).

The DX-pedition can take many forms — from a week-long sojurn into the quietest countryside to a few days in the hills or on the coast or even a day or night to the nearest DXer's haunt.

Many radio clubs arrange regular Dx-peditions. A few friends and a bit of skip can make for a most enjoyable time.

The most obvious problem is power for the rig. Heavy-duty vehicle batteries can do the trick, although generators can be useful for long periods of higher power operation. These, however, can cause disturbing amounts of electrical interference.

Antennae are the next considerations. It might be possible to take your ⅝ wave with you, but many Dxers use the trusty horizontal wire dipole. The dipole is the simplest antenna configuration, easily home built and at little cost. It's extremely portable and can produce amazing results with a well-tuned rig, in city or country.

There are a few tricks in selecting a good site for DXing. If you are considering a coastal location, beware of caravan parks. Most 'vans use a very basic TV antenna and this makes them very susceptible to TVI.

The rule of thumb is, of course, 'the higher, the better'. Atop a mountain or plateau is the most common DX choice. This position will, in theory, enable signals from all directions to be heard.

For more selective DX, try going a little way down the mountain or hill, facing the direction you wish to contact. This will block signals from the other side of the mountain. If you're lucky, you may come across a natural DX 'amphitheatre', with a smaller hill between your site and the signal direction. This forms a capture area for the wanted signals.

Take a selection of 'spares' with you — mike, co-ax, plugs. A soldering iron and other needed tools can come in handy (of course, the iron might need to be a 12 V model, for portable use).

This is only the briefest look at DX-peditions, but should be enough to start the ball rolling. If you're interested, talk to a couple of mates, and maybe you'll soon be working the rarer DX from some country retreat.

## THE LEGALITY OF DX

Under current regulations, CB stations are permitted to communicate with any other licenced CB station with Australia and her territories. To this extent — provided you're using legal channels and power — DX within the country is perfectly legal.

The question of overseas DX is a much more difficult one. Current policy of the DOC rests upon a public statement made by a senior DOC official — and since ratified by the Department at a CBers conference held at Brisbane some four years ago.

The rules of overseas DX are simple. You are not to make specific calls such as 'CQ DX America', although a general 'CQ DX' (and certainly an 'on the channel' announcement) would be okay. If a overseas station replies, you're in luck — let the QSO commence.

But — you must be running 100% legal. The contact must take place on legal channels, with legal power, otherwise the whole deal is — as they say — 'null and void'. The overseas station must be operating likewise, within the terms of his licence.

Of course, that's a catch you could use to make the whole argument irrelevant. Almost all countries specifically prohibit overseas communications from their CB service, or clearly limit operators to QSOs within the country (or even over smaller distances). So the minute your overseas contact talks to you, he's breaking the rules — not operating under the terms of his licence — making him illegal, and outlawing your entire conversation with him!

Catch 22? Perhaps so, but it's better than the old 32 km limit of the original RB14!

As we said at the start — the DX is there, it just needs a little expertise to work it.

So you on the lower side of 35!

# CBA Notebook

# CHOOSING A POWER SUPPLY AND TUNING ANTENNAS

**BY KEN REYNOLDS**

Operating a base station at home can be an expensive business and many operators opt to use a mobile transceiver and separate 13.8Vdc power supply in preference to a dedicated base unit which includes its own adequate power supply. For some reason the great debate over power supply rating still continues! While choosing the right supply can be a bit tricky for beginners, it is by no means a difficult process. As usual, a bit of common sense and a keen eye hold the answers.

As a general rule, a heavy duty power supply offering good regulation of the output voltage and plenty of current is the safest choice — it is also the most expensive. If you are tied into the devaluation spiral like most of us, two or three hundred dollars for a good bench supply is simply out of the question. So, how can we find out exactly the right size power supply to properly do the job?

The radio manufacturer usually comes to our aid on this one. Most CB radios are supplied with an operating manual which also contains a list of specifications — usually at the front or back section of the booklet. While many operators don't bother to read all this gobble-de-gook — stuff for the too hard basket — the specifications page will generally hold the precise answer to the power supply dilemma. Find the section that refers to operating voltage — which in all but the most unusual case will be 13.8Vdc (13.8 volts direct current). Next to this information is usually printed a short table of the maximum current the transceiver requires when receiving only and when transmitting at maximum power output. The measurement is in amps (amperes) and this will tell you the minimum power supply requirement for the rig to operate efficiently.

Remember, AM only CBs require considerably less current than sideband rigs — for transmit at least. Some UHF rigs require larger supplies than others — look at the book first!

While determining the rigs needs is straight forward, it is not always so easy to decide on the correct power supply. Most power supply manufacturers also include a specification sheet with their products. Unfortunately, whether by accident or intent, there sometimes seems to be a short-fall in the information included.

What you need to know is the continuous output current, the peak output current and the duty cycle of continuous and peak output current.

If for example the power supply is rated at 2 amps and no further information is offered, reserve judgement and hold onto your money until you have investigated further.

While your rig may only require 2 amps for proper operation, it is possible that the supply only offers 2 amps peak current for a short period (a low duty cycle) before straining itself. Duty cycle is expressed as a percentage and relates to the length of time the maximum current may be drawn safely to the length of time that current drain must be reduced to a lower nominated level. Sometimes duty cycle is expressed as time on against time off periods, e.g. . . . one minute on, one minute off.

For example, a power supply offering 2 amps continuous and 4 amps peak with a 50% duty cycle is adequate to run most CB radios.

A power supply rated at 4 amps with 50% duty cycle may have no more to offer than the former, however, at a quick glance, many would assume that the 4 amps supply was the best.

Let's clear up one little myth forever. . . . You can't have too much current supplying capability from your power supply — only too much voltage. For some reason many operators concern themselves that a 50 amp power supply might be dangerous to their rigs. The only time that this danger exists is if the output voltage of the power supply is set too high.

The reason being that Voltage and Current are inextricably linked together in physics, so it is impossible for one to be out of whack with the other. Even with a 1000 amp power supply operating at 13.8 volts, your rig will only consume the same amount of power as it would using a 10 amp supply operating at the same voltage. Voltage can be likened to the pressure which causes current to flow in an electrical circuit, therefore, for a given pressure only a related amount of current can be forced to flow in a given circuit.

Finally, never use a power supply which is not designed to operate a CB radio or similar type equipment. Battery chargers and model electric train transformers are definitely out.

## MOUNTING AND SWRING MOBILE WHIPS

This is a subject we have not looked at for some time. If you have 'been there, done that' there is plenty more to read in this issue. Those who are new to CB always find that mounting and tuning a new antenna is a perplexing business to say the least.

Most people have heard that the best position to mount a mobile antenna is smack in the centre of your roof, however, only few of us are prepared to drill holes in the top of one of our most highly prized possessions.

# CBA Notebook

The truth is, there are horses for courses and while technically we may get the best results from butchering the car roof, in real terms excellent results are obtained from mounting a good quality mobile whip in any one of a variety of positions on the vehicle. As a general rule, longer antennas offer greater efficiency than short aerials. Antennas less than 30cm long (for 27MHz use) are often questionable in performance and they are frequently very difficult, or even impossible, to tune properly regardless of where they are mounted. A SWR (Standing Wave Ratio) meter is the most common test instrument used to aid antenna tuning and is readily avaialble from most CB shops. You don't really need the biggest and best, usually a rudimentary instrument will give good results and you shouldn't need to pay much more than 25 or 30 dollars. Instructions for use are included with the meters and, if you decide to tune your own antenna, follow the book for best results. Better still, get your antenna supplier to do the job for you. You have got two good things going for you if the supplier does the job:

1. He has probably tuned hundreds of aerials and knows what potential problems may be encountered.
2. If he destroys the antenna, he wears it — providing the antenna is installed correctly.

MOUNTING SPOTS

Unless your antenna is a special 'ground independent' type — and there aren't too many around — it will require a good earth to the body of your vehicle. This is obtained via the mobile base mounting hardware.

The importance of this earth connection cannot be stressed too much — without it, the antenna will not work properly and an adequate SWR will not be obtained. Your CB antenna is only one part of the system — a bit like only half the aerial system. The body of the vehicle supplies the other half — one is dependent on the other.

The antenna is designed to be slightly too long for the job and after installation it will be necessary to 'trim' the length to obtain the desired results. Another way would be to start ripping bits off your car — start with the bumpers if they are not plastic, otherwise remove one front mudguard and check the SWR before removing the other! Some antennas do have adjustable tips, however, even then it is sometimes necessary to cut off a portion of the tip to tune the antenna properly.

There are various types of hardware designed to help you mount an antenna without the need for drilling holes in your vehicle. These include gutter grips, boot-lip mounts, magnetic bases, and mirror mounts which double as ski-bar mounts. These accessories offer a fair amount of latitude in where you might successfully mount your antenna. However, the first rule of thumb still applies — each type of mounting arrangement MUST connect well with the body of the vehicle. To do this properly, the mounting screws must penetrate the paint work and produce a secure electrical contact with the metal beneath. Magnetic bases rely on a different type of earth coupling. If you use a ski-bar or roof rack bar of some description, be sure that they are suitably earthed. Many roof carrying bars employ plastic 'feet' to avoid scratching the roof or guttering channels. These points must be earthed to the body of the vehicle. It is often not enough to earth only one end of a ski-bar — both ends should be attended to.

If one end of such a bar is left unearthed it can produce a type of tuned circuit which will defeat all attempts to tune the antenna.

Brackets mounted on 'bull-bars' are also common mounting spots for CB antennas. Again, a good electrical contact to the vehicle is necessary.

Sometimes a poor conection to earth in any of the popular mounting positions will allow an antenna to tune adequately, however, high resistance connections are frequently the cause of electrical noise problems in CB receivers. If you experience this problem, try moving the antenna mount to a different location and check the results before spending bulk money on other curative measures.

If the co-axial cable connecting the radio to the antenna must run through the engine compartment of your vehicle — use common sense and keep it as far as possible from the engine electrical system. Also, use the best cable you can buy. Top grade cables always have very tightly woven earth shields which help prevent the entry of electrical noise.

CAUTION

Having mounted your antenna and radio, proceed with caution before testing the transmitter. DO NOT just plug in the antenna cable and try to talk to the world — it could be an inconvenient, expensive mistake.

Double check the antenna installation for short circuits and loose or 'off' wires. If you have access to a multi-test meter that allows you to check resistance or a continuity meter of some type, take the time to perform a few basic safety checks. Connect the meter probes across the inner and outer terminals of the cable/coaxial plug — you should read an open circuit (no connection). If not, find the problem before continuing. The most common source of short circuits are frayed braid in the connector bridging across to the centre terminal — you may need to reterminate the plug.

Another common problem is the incorrect mounting of the base mount — the centre bolt must be electrically isolated from any earth connection. Sometimes the connections at the mounting base have been reversed — check that you have connected the outer cable screen to the earthed part of the base — the inner cable conductor always connects directly to the antenna bolt in the mobile base.

Next check with the multi-meter that the centre pin of the connector actually connects directly to the antenna bolt on the mounting base.

Occasionally for no apparent reason, there is a break within the cable and the connection is lost. There may be no visible signs that something is wrong.

This might appear to be an alarmist attitude and most likely, you will find that all is well.

However, the reason behind the basic tests is well founded and it is better to be safe than sorry.

Unfortunately, some CB radios are particularly sensitive to incorrect antenna loading and should you transmit into an improper antenna system the radio's output transistor can be destroyed in an instant — often faster than it takes for the transmit indicator to even begin to move. This type of damage to the radio is not usually covered by the manufacturer's warranty — so, if you blow it you wear it!

When you are sure that all is well, connect the antenna to the radio and adjust the controls for reception only — if you are not familiar with the operating requirements of your radio, read the instruction manual. If the antenna is 'in the ball park' you should hear plenty of activity and the radio should sound 'lively'.

If you can't hear anything much and there appears to be very little background noise chances are that you have a problem. Go back to step one and start again.

Still no luck? Better get a more experienced opinion but DON'T TRANSMIT just to find out if something is wrong.

Everything seems OK? Time to set about tuning the antenna.

If this is your first attempt at tuning, it is suggested that you get some help — it really is so easy to cut an antenna too short on your first try.

This of course gets you into a whole new set of problems.

SWR AND TUNING

Tuning an antenna is much akin to tuning any other type of circuit — your ordinary car radio is a good example. When you move the tuning control, you do it carefully so that you can clear-

ly hear the station — a tiny bit one way or the other and you don't get the right results.

A CB aerial is a similar type of tuned circuit and requires an even more careful approach — usually, if you tune too far it's not so easy to go back again.

Set up your SWR meter according to the instructions supplied. It is a good idea to practice calibrating the meter a few times before you attack the antenna, and perform the operation quickly so that you only transmit for a few seconds at a time. If the SWR is bad initially, short transmissions are least likely to damage your radio.

Always conduct the SWR checks by alternating between the highest and lowest channel numbers. With a 40 channel set use ch1 and ch40 — the channels in between will pretty well look after themselves.

If the antenna is too long (which it usually should be) you should read the lowest SWR on channel 1. Make the adjustment a little at a time and check the result on both high and low channels. If you have a fibreglass style whip, use a small saw to make the cuts — never use pliers as they tend to crush the fibreglass and permanently damage the antenna.

If the SWR has improved, repeat the process until the SWR is quite low on the lowest channel. Final trimming should be done carefully so as to balance out the SWR at both ends of the band. If you have gone too far, the SWR on channel 1 will begin to increase and it may be now lower on the highest channel number. If both readings are below 1.5 to 1 you have done well. Many antennas may produce results where the needle will barely move at either end of the band. Stop at this point and pat yourself on the back.

Short antennas may be quite high at each end of the band with a dip occurring towards the middle of the channel range — again, stop tuning, this is about the best you can hope for. Some antennas (especially the short ones) may be incapable of producing a low SWR across all the channels.

If you think you have cut the antenna too short, press the PTT button and observe the meter, while moving your hand close to the antenna. If you observe a 'dip' in the reading during this process, chances are that you have "over pruned". You might need to buy another antenna, or, try extending the old one — it's a good idea to experiment this way before you destroy number two.

If the effect of your hand near the antenna only increases the SWR reading it is most likely that you still have some 'pruning' yet to do.

WHAT THE SWR METER READS

When you press the PTT button radio frequency energy (RF power) is directed into the coaxial cable.

Pressing the transmit button of your radio is a bit like turning on a tap — the transmit energy is released and has left the source.

Since energy cannot be destroyed, it has to go somewhere — in this case it will travel along your coaxial cable until it reaches the antenna. If the antenna provides the right set of conditions the energy will be released into the world in the form of radio waves. Under optimum conditions virtually all the energy is radiated from the antenna.

Under less than adequate conditions (poorly tuned antenna — poor SWR) the energy meets a blockage at the antenna and only part of the energy is radiated. The remainder of the energy, since it is indestructible, must go somewhere — and it does. It travels back down the transmission cable toward the transmitter, or back where it came from in the first instance.

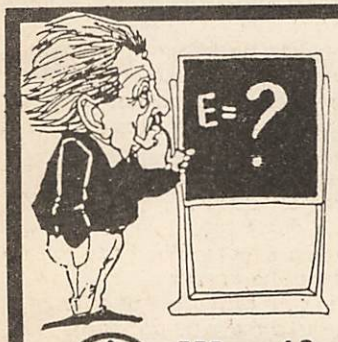
You guessed it! On the return journey it meets a fresh burst of energy coming the other way. A state of equilibrium is quickly reached where at certain points along the way cable the values of energy add together and become our old enemy — Standing Waves. At other points along a cable there will be a subtraction of the energy levels and a trough will result which is equivalent to the difference in the amounts of energy at that point.

If one of these energy lumps happens to peak right at the output stage of the transmitter, the power produced at that point can be sufficient to overload the output transistor and destroy it.

An SWR meter is designed to read the effective power travelling along your coaxial cable in either direction, thus we have the two scales on the meter, forward (FWD) and reverse REV or REF). Sometimes the reverse direction is just labelled SWR.

Since we can read either value at the flick of a switch we can calibrate the forward direction for maximum and then observe the left-over level — the power which has been returned unused from the antenna.

Obviously our intent is to send all the power to the antenna and have as little as possible returned down the line to the transmitter. When the antenna is tuned properly we approach the desired conditions and therefore read a low SWR. Simple isn't it.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# CBA SNEAK PREVIEW

# ROYCE TS-133 MOBILE UNIT

If you have been searching for that ultra small UHF radio for your mobile, we might just have the answer — the Royce TS-133 being marketed by Hatadi.

This isn't a rig review as such, that will appear in our September issue. Rather, it's a chance to have a look at a rig with a heap of features, but with Lilliputian dimensions. Hatadi describes the unit as ultra compact, which seems a fair assessment as the TS-133 measures in at 162mm wide x 27mm high x 1430mm deep. Its weight is a meagre 700 grams.

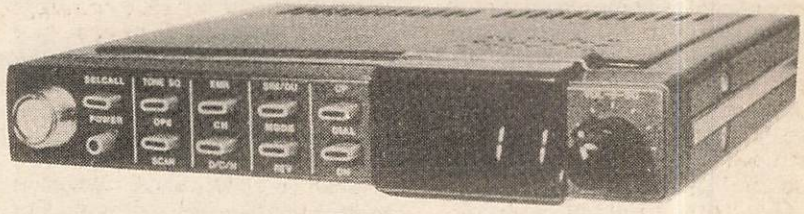
So just what have Royce packed into this bonsai UHF rig?

You still get the full bottle as far as power out is concerned — the specs say 5 watts. In addition you get electronic channel switching; all repeater channels fitted, plus a reverse repeater switch for checking the repeater uplink — you may be able to make contact using simplex, and so leaving the repeater free for other operators; one touch selection for the emergency channel, highway channel, or call channel; a remote channel selector on the microphone. CTSS and selcall are options, as is a shortly to be available "portapack" battery pack, which will make the TS-133 a very versatile unit. There is also a base station module available.

The microphone is also quite small, and in fact is identical in appearance to the microphone supplied with the Philips FM620 — except for the brand name.

The microphone socket is located on the front of the unit, and features a solid eight pin screw on connector. It occurred to us that fitting this unit with a power mic. might pose a few problems for the "do it yourself" CBer. We have enough trouble sorting out a five pin connector!

The antenna socket on the rear panel is a BNC type. Mr Royce — may we take this opportunity to congratulate you on your selection. With the size of the rear panel being so restrictive, it may have been a case of "no alternative", but we'll give him the benefit of the doubt.



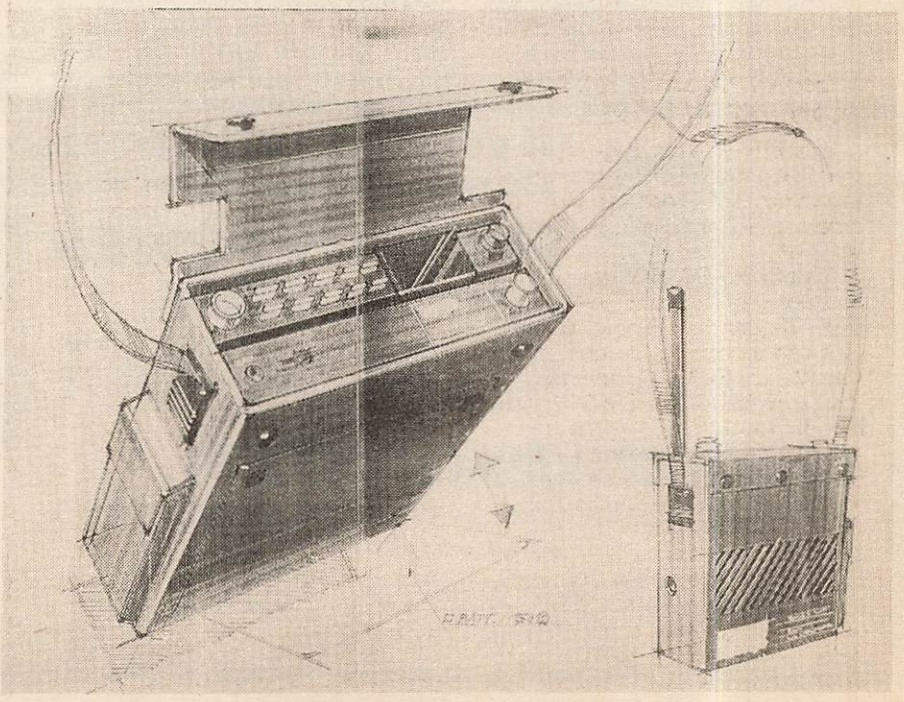
Also on the rear panel are two miniature jacks — one for an external speaker, and the other, according to the handbook, is used for "optional battery operation to save the battery life, by controlling Output Power THROUGH-/LOW (approx 1 watt) and LED DISPLAY ON/OFF."

Despite it's small size, the TS-133 supplies a surprising amount of information from the LED readout. It has a bar graph for incoming signal strength, and power out, plus a readout of any special function selected — highway channel, or emergency channel.

There are also two indictor lights for selcall alert, and TX indicator.

All things being equal, we will be able to give you a run down on how this unit performs in our next issue. In the interim, why don't you check one out at your nearest Hatadi retailer.

***An artists impression of the proposed portable battery pack for the TS-133.***



## NEW SCANNING RECEIVER

GFS Electronic Imports of Mitcham, Victoria recently announced the availability of a portable programmable receiver designed with the professional user in mind.

Known as the Microcomm Model SX-155 its small size, light weight, rugged construction, and 160 memory channels make it ideally suited to the tough life a piece of professional electronics is expected to endure, claim GFS.

The SX-155 is also big on design features — for example its 160 memory channels are divided into four groups of 40 channels, each with its own priority, i.e. a total of 4 priority channels.

Frequency coverage is 26-32, 68-88, 138-176 and 380 to 514 MHz with a sensitivity of less than 0.5 uV over this range.

An automatic search and store function is also built in. Using this feature the operator can set two frequency limits anywhere within the SX-155's range and let the radio do the rest. It will automatically look at each frequency for activity. On finding an active channel the frequency is stored in one of the SX-155's upper memories and the search resumes. If that frequency was stored on a previous search it will not be duplicated.

The Microcomm SX-155 is powered by rechargeable nicad batteries, and is supplied complete with a charger, carrying case and rubber antenna. Its case is manufactured from a tough extruded aluminium section designed to take a lot of work.

Price of the SX-155 is, at the time of writing, $485 including sales tax, plus $14 freight. For more information contact the Australian distributors: GFS Electronic Imports, 17 McKeon Road, Mitcham; Victoria, 3132. Phone (03) 873 3777 or telex 38053 GFS.

## SAIKO SC1600 MOBILE SCANNING RECEIVER

Imark Pty. Ltd. have received the Saiko SC1600 programmable scanning FM receiver for use where a scanner is required in a vehicle.

The Saiko SC1600 features direct entry of up to 16 VHF and/or UHF frequencies. These frequencies can be reprogrammed at will. The Saiko SC1600 operates on VHF low band (68-88MHz), VHF high band (148-174 MHz) bands. Any 16 frequencies within these frequency ranges can be used.

A CPU is used to control the PLL and the operational functions. These functions include manual channel change, scanning, delay, and channel lockout. LEDs are used to indicate the channel, scan, delay and channel lockout functions. Other features include adjustable squelch, tone and volume/on/off controls.

A Saiko SC1600 uses all solid state devices for low battery consumption. It utilizes the double conversion system, a monolythic crystal filter and two ceramic filters to provide selectivity and sensitivity. The audio amplifer provides 1.5 watts output.

The Saiko SC1600 is supplied complete with DC cable, telescopic antenna, mobile mounting brackets and operators manual. The Saiko SC1600 is 150mm (W) x 192mm (D) x 55mm (H) and weighs 1.1 kgs.

Further details can be obtained from the importers, Imark Pty. Ltd., 167 Roden Street, West Melbourne, Victoria, 3003. Telephone (03) 329 5433. Telex AA 37753 "IMARKO". or Perth (09) 364 9010 or Brisbane (07) 52 7171.

## SEA SIMBA MARINE RADIO

Hatadi Electronics have recently announced the release of the Pearce-Simpson Sea Simba, their new 27 MHz marine radio.

The Sea Simba is a compact AM unit featuring all ten 27 MHz marine channels, from 27.68-27.98 MHz. Controls include the built-in automatic noise limiter (to reduce background noise and interference), mike gain and RF gain.

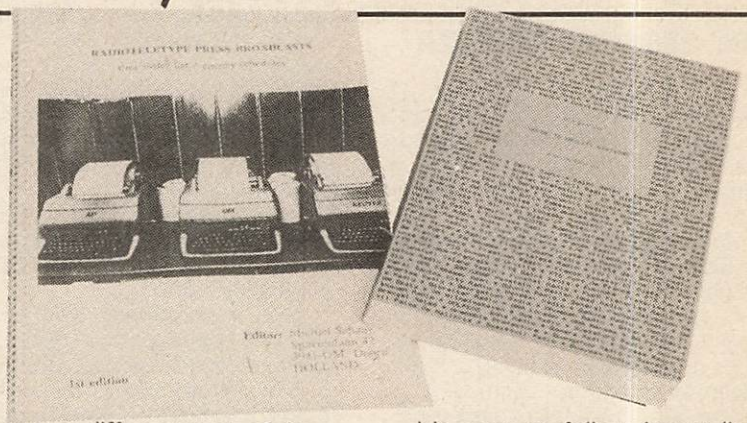
Fully DoC approved, Hatadi claims their new addition to the Pearce-Simpson marine line is 'ideal for all yachts, cruisers and runabouts. The optimum range on open water may range from 20-40 miles, which is most cases is adequate'.

The Sea Simba retails at $149.95, and is now available from your local Pearce-Simpson dealer. For further details on this or any other Hatadi product, call the Hatadi Communications Hotline on (02) 99 1229.

## NEW FREQUENCY LISTS

GFS Electronic Imports of Mitcham, Victoria, recently announced the arrival of two new publications designed to provide the SWL with all those generally unknown frequencies at his/her fingertips. The first, and newest, is by that well known German author "Klingenfuss". Known as a "Guide to Utility stations" it is a soft bound book containing 465 pages of frequency users, their operating schedules, their modes of operations (SSB, RTTY, FEC, ARQ & FA) over a frequency range 0 to 150 KHz and 1.6 to 30 MHz..

As an added bonus to the purchaser of "Guide to Utility Stations", and also contained within its pages, is the twelfth edition of "Guide to RTTY Stations". The combination lists over 1500 frequency users including, amongst others 80 RTTY Press Services along with 502 of their frequencies. As a further bonus three large fold out world Maps show various areas, and the frequencies used within them, by the Aeronautical



services over different parts of the globe. "Guide to Utility Stations" is available from GFS fo $45 plus $5 P&P, catelogue No. UG-86.

The second publication is by Michiel Schaay, a highly respected Dutch author who has gained his reputation through a number of well received previous listings. Known as the "Radioteletype Press Broadcast Time/Order List" it is ideal for those interested in monitoring the worlds press services.

It's easy to follow layout lists 56 different agencies in Time Order, a total of 1500 entries. For those interested in a particular press agency the Radioteletype Press Broadcast Time/Order list also contains a Time/Frequency schedule for each agency. Price of the publication, catalogue NO. RTPB is $25 plus $4 P&P.

For further information contact GFS Electronic Imports, 17 McKeon Road, Mitcham, Victoria, 3132. Phone (03) 873 3777. Telex: 38053 GFS.


# "We service everything we sell"

**Captain Communications are Australia's number one for CB equipment.**

**All our products are backed by our experienced on-site technical department. We're so good, other dealers send us all their repair work too!**

**Every radio is checked**
Every radio is pre-checked in the store. So every radio carries the exclusive Captain Communications 12 month warranty (parts and labour).

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The key to top performance is a top installation. Captain Communications are the experts. All installation is carried out on-site by our three qualified staff technicians.

**Antennas**
Including the famous ZCG – hand made in Australia for our demanding conditions. 30 types of antennas – we've got the lot.

**Test Equipment**
Whether you need dummy loads, VSWR/power meters, multimeters or other test equipment, give the Captain a call – we've got best range and the best advice.

**Transceivers**
Only the best brands, both 27MHz and UHF, including Uniden, Electrophone, Philips, Royce, Pearce Simpson and Ranger.
And of course they are all serviced right here in our workshop.

**Connectors**
We carry a huge range, including UHF, BNC and N-type, plus a large range of adapters.

**Accessories**
- ❑ Cable Assemblies
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- ❑ Millions of other bits including springs, laybacks, antenna mounts

**Alarms**
Captain stocks the fantastic range of fully imported MED Alarms from Italy. Med alarm provides the ultimate in total vehicle security systems.

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Extension, weather proof, dustproof and PA speakers.

**Cables**
Audio, RF, Coax, battery, multicore and speaker. Whatever you need to wire it up.

**Filters**
Huge range of filters and noise suppressors. We are the experts. Call in for a free assessment if you have electrical noise problems in your vehicle.

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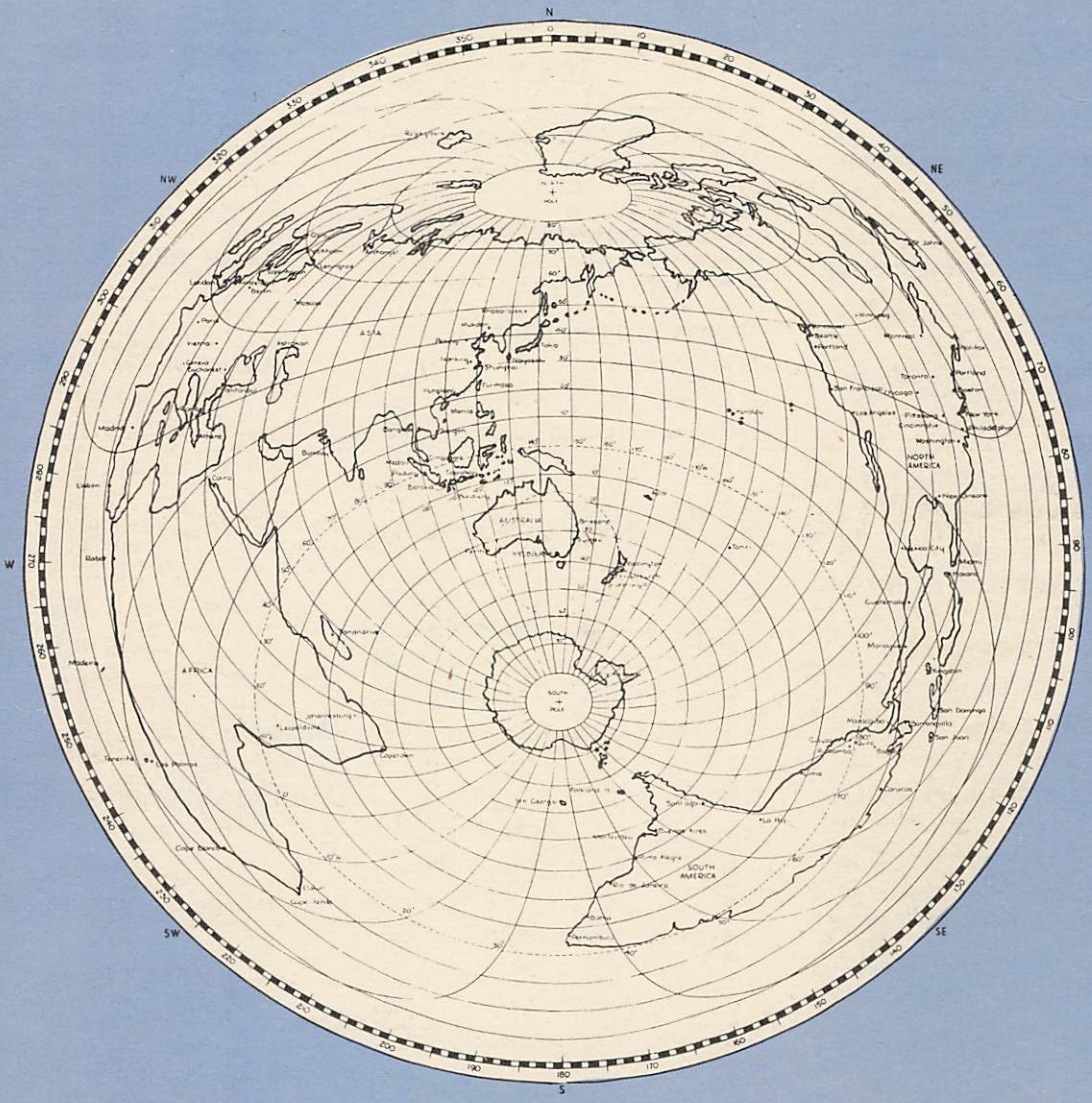
# CB ACTION QUARTERLY CRYSTAL BALL PREDICTION FOR 27MHz DX



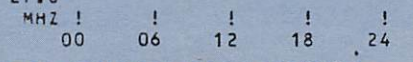

## BEAM HEADINGS

Tie a piece of cotton to a pin. Place the pin on the map of Australia as near as possible to your location, and extend the cotton through the area or country which you would like to listen to or contact. Read off the bearing from the perimeter scale. This is your beam heading.

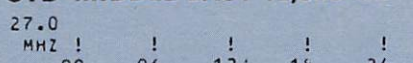
# THE CB ACTION QUARTERLY CRYSTAL BALL

## JULY

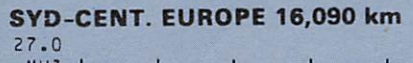
**SYDNEY-JAPAN 7821 km**



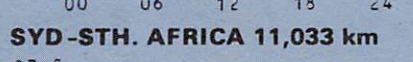

**SYD-MIDDLE EAST 12,906 km**



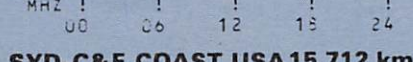

**SYD-CENT. EUROPE 16,090 km**



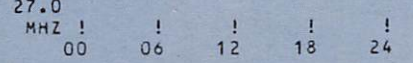

**SYD-STH. AFRICA 11,033 km**



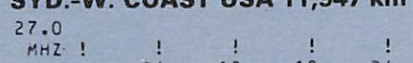

**SYD-C&E COAST USA 15,712 km**



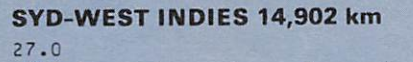

**SYD.-W. COAST USA 11,947 km**



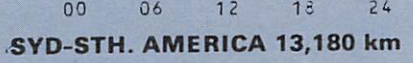

**SYD-WEST INDIES 14,902 km**



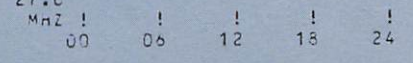

**SYD-STH. AMERICA 13,180 km**



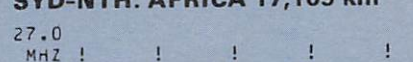

**SYD-NTH. AFRICA 17,109 km**



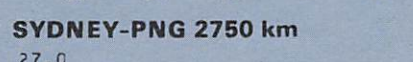

**SYDNEY-PNG 2750 km**




**SYD-ENGLAND SR 16,985 km**




**SYD-W. AFRICA SR 16,055 km**




**SYD-ENGLAND LR 23,038 km**




**SYD-W. AFRICA LR 23,969 km**




**PERTH-JAPAN 7921 km**




**PERTH-MIDDLE EAST 10,081 km**




**PTH-CENT. EUROPE 13,575 km**




**PERTH-STH. AFRICA 8308 km**




**PTH-C&E COAST USA 18,614 km**




**PTH-W. COAST USA 14,739 km**




**PTH-WEST INDIES 17,983 km**



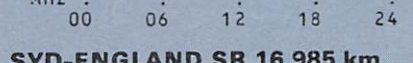

**PTH-STH AMERICA 14,569 km**




**PERTH-NTH. AFRICA 13,941 km**




**PERTH-PNG 4076 km**




**PERTH-NZ 5258 km**




**PTH-ENGLAND SR 14,474 km**




**PTH-W. AFRICA SR 13,025 km**




**PTH-ENGLAND LR 25,550 km**




**PTH-W. AFRICA LR 26,998 km**




**MELB-PNG 3166 km**




**BRIS-PNG 2100 km**




**HOBART-PNG 3722 km**




**ADELAIDE-PNG 2970 km**




**BRIS-NZ 2507 km**



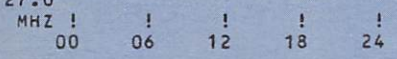

**ADEL-NZ 3217 km**



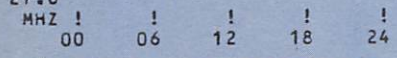

**DARWIN-NZ 5322 km**

# CRYSTAL BALL

**SYDNEY-JAPAN 7821 km**

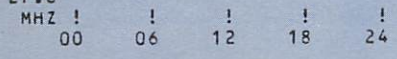



**SYD -MIDDLE EAST 12,906 km**



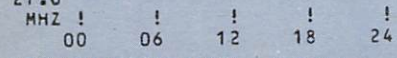

**SYD -CENT. EUROPE 16,090 km**

**SYD -STH. AFRICA 11,033 km**

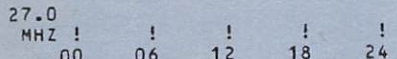



**SYD-C&E COAST USA 15,712 km**

**SYD.-W. COAST USA 11,947 km**



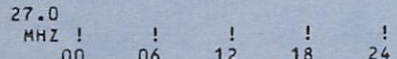

**SYD-WEST INDIES 14,902 km**




**SYD-STH. AMERICA 13,180 km**

**SYD-NTH. AFRICA 17,109 km**

**SYDNEY-PNG 2750 km**




**SYD-ENGLAND SR 16,985 km**

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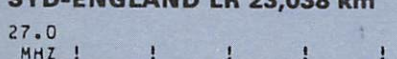
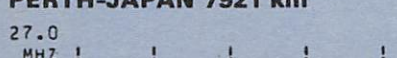
**SYD-ENGLAND LR 23,038 km**



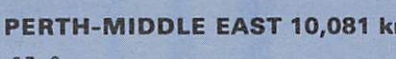

**SYD-W. AFRICA LR 23,969 km**

**PERTH-JAPAN 7921 km**

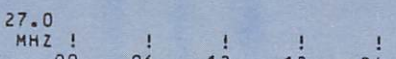



## AUGUST

**PERTH-MIDDLE EAST 10,081 km**

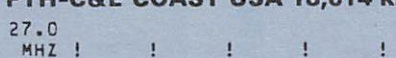



**PTH-CENT. EUROPE 13,575 km**

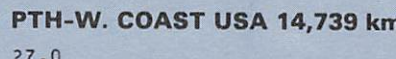



**PERTH-STH. AFRICA 8308 km**

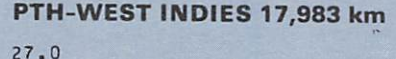
**PTH-C&E COAST USA 18,614 km**



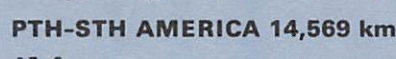

**PTH-W. COAST USA 14,739 km**



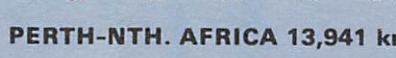

**PTH-WEST INDIES 17,983 km**



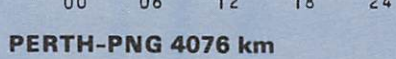

**PTH-STH AMERICA 14,569 km**



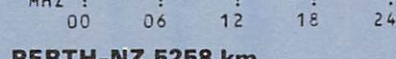

**PERTH-NTH. AFRICA 13,941 km**



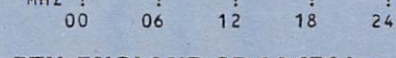

**PERTH-PNG 4076 km**



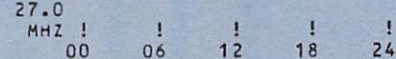

**PERTH-NZ 5258 km**



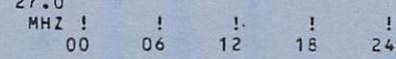

**PTH-ENGLAND SR 14,474 km**




**PTH-W. AFRICA SR 13,025 km**



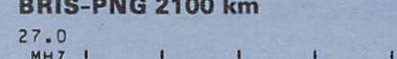

**PTH-ENGLAND LR 25,550 km**




**PTH-W. AFRICA LR 26,998 km**

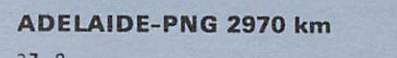
**MELB-PNG 3166 km**

**BRIS-PNG 2100 km**

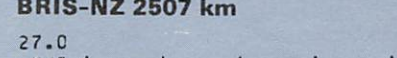



**HOBART-PNG 3722 km**

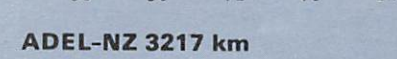
**ADELAIDE-PNG 2970 km**



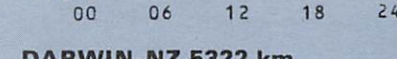

**BRIS-NZ 2507 km**




**ADEL-NZ 3217 km**




**DARWIN-NZ 5322 km**




### LEGEND TO GRAFEX SYMBOLS

"A blank means propagation is not possible normally.

' ' Propagation is possible but probably on less than 50% of the days of the month.

'%' Propagation is possible on between 50% and 90% of the days of the month.

'F' Propagation is possible by the First F mode on at least 90% of the days of the month unless there is a severe ionospheric disturbance.

'M' Propagation is possible by both the first and second F modes. The strongest mode is normally the first mode but the vertical aerial pattern may influence the mode received.

'S' Second mode but no first mode.

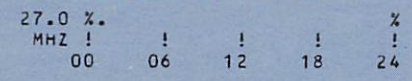
'A' High absorption i.e. above the ALF but probably too close to it for good communication.

'X' Complex mixture of modes including the second E mode.

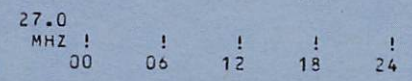
# CRYSTAL BALL

## SEPTEMBER

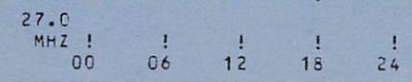
### SYDNEY-JAPAN 7821 km



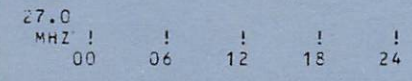

### SYD-MIDDLE EAST 12,906 km



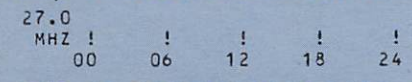

### SYD-CENT. EUROPE 16,090 km



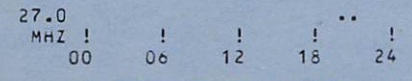

### SYD-STH. AFRICA 11,033 km



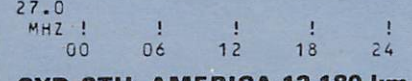

### SYD-C&E COAST USA 15,712 km



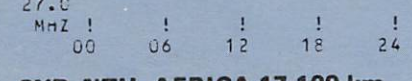

### SYD.-W. COAST USA 11,947 km



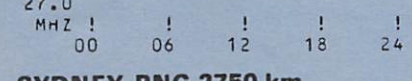

### SYD-WEST INDIES 14,902 km



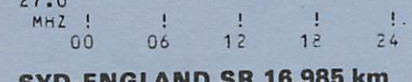

### SYD-STH. AMERICA 13,180 km



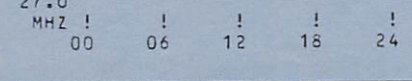

### SYD-NTH. AFRICA 17,109 km



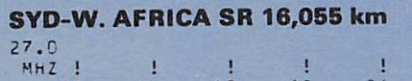

### SYDNEY-PNG 2750 km



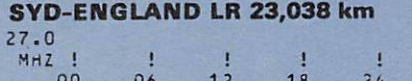

### SYD-ENGLAND SR 16,985 km



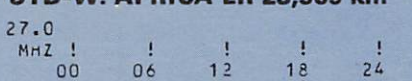

### SYD-W. AFRICA SR 16,055 km



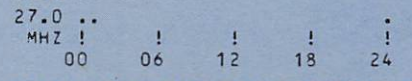

### SYD-ENGLAND LR 23,038 km



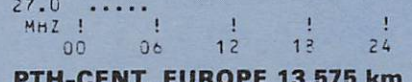

### SYD-W. AFRICA LR 23,969 km



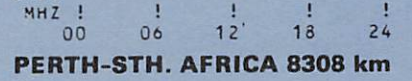

### PERTH-JAPAN 7921 km



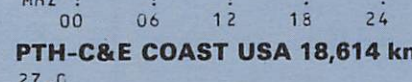

### PERTH-MIDDLE EAST 10,081 km



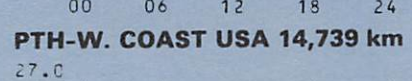

### PTH-CENT. EUROPE 13,575 km



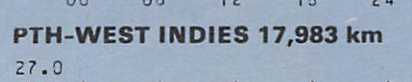

### PERTH-STH. AFRICA 8308 km



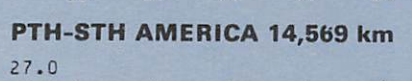

### PTH-C&E COAST USA 18,614 km



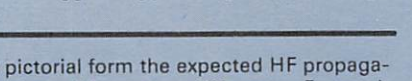

### PTH-W. COAST USA 14,739 km



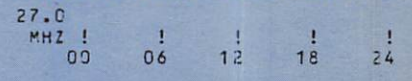

### PTH-WEST INDIES 17,983 km



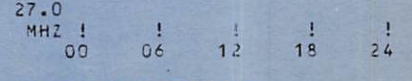

### PTH-STH AMERICA 14,569 km



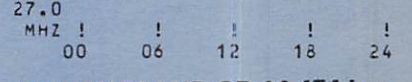

### PERTH-NTH. AFRICA 13,941 km



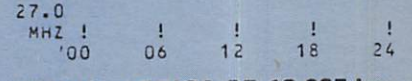

### PERTH-PNG 4076 km



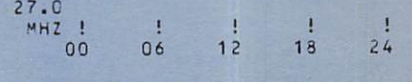

### PERTH-NZ 5258 km



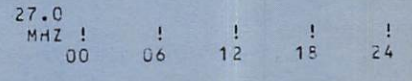

### PTH-ENGLAND SR 14,474 km



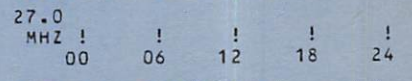

### PTH-W. AFRICA SR 13,025 km



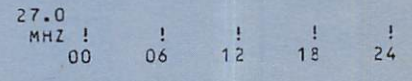

### PTH-ENGLAND LR 25,550 km



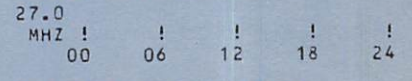

### PTH-W. AFRICA LR 26,998 km



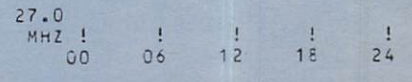

### MELB-PNG 3166 km



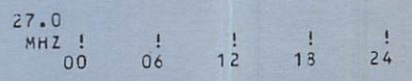

### BRIS-PNG 2100 km



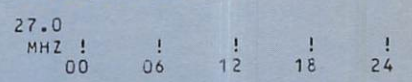

### HOBART-PNG 3722 km



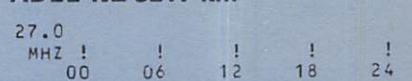

### ADELAIDE-PNG 2970 km



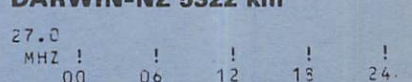

### BRIS-NEW ZEALAND 2507




### ADEL-NZ 3217 km




### DARWIN-NZ 5322 km




These GRAFEX style predictions present in pictorial form the expected HF propagation conditions between Australia and a number of important DX areas. For each circuit, the "Sydney" terminal refers to the eastern half of Australia and "Perth" refers to the western half of Australia. The horizontal axis of each graph represents the hours of the day in Greenwich Mean Time from 0000 hours to 2300, reading left to right.

A GRAFEX symbol represents the predicted propagation conditions at a particular time. The meaning of each symbol used is given in the key on the next page. The letter "F" designates the best conditions for HF communications.

Grafex prediction charts supplied courtesy of the Ionospheric Prediction Service, 162-166 Goulburn Street, Darlinghurst, NSW. IPS offers pre-recorded telephone information. To access the service, please phone (02) 269 8614.

Ionospheric Prediction Service is a section of The Department of Science and Technology.

# Back to You

## MACLEAY VALLEY CLUB

The Macleay Valley C.B Radio Club has about 60 financial members, 13 Life members, two Honorary members and one Memorial Member (a perpetual trophy is awarded each year to the Clubman of the year — The John Nicholson Memorial Trophy — to the person who has attended the most meetings and activities).

We hold two meetings each month:- 1st meeting on the second Wednesday, Viking Room, Hotel Kempsey, Belgrave Street, Kempsey, 7.30 p.m.; and 2nd meeting on the fourth Wednesday , on-air Channel 1 Aus or 5 American, call-up at 7.30 p.m.

An Annual event is collecting clothes for the Smith Family. Over the last 7 years the club has collected 15 tonnes of clothing and shipped it to Sydney for distribution throughout NSW. We have helped with co-ordinating collections of monies for several funds — Fire Appeal, Aged Homes Appeal, Telethon Appeal for the Handicapped, Hospital Centennary Appeal, items collected for a Monster Auction to raise funds for an indoor stadium. We have donated fans to the A&R Ward of the Hospital and a Maximyst to the Surgical Ward; donated part proceeds towards a radio for the local Volunteer Rescue Squad; donated card tables and games to the local Home for the Aged.

Social events are BBQs at the beach or members homes, Observation Trials (by car or by foot), foxhunts, scavenger hunts, manning controls at car rallies and the Macleay 1000 Off-road event, using our CBs to relay progress of events to officials; bush drives; attending Lismore Speedway; assist State Emergency Services (S.E.S.) in floodtime with communications; escorts and communications for marathon, ½ marathon and mini fun runs.

We also have several International members and accept interstate members.

S. Walkden
Secretary

## FAMILY CB CLUB

The Unicorn Radio of Australia club is an alternative family based CB radio club whose objectives are to promote Citizens Band radio throughout Australia; extend good will and friendships to individual operators, family groups, and other CB clubs everywhere. Additionally, we seek to encourage new and young operators in the correct use of equipment, while observing DOC regulations and showing courtesy and respect to other CB operators.

Benefits derived from club membership are: QSL cards, membership certificates, club tee shirts and patches, discounts on CB equipment and accessories, technical advice and assistance, club newsletters, organised events, competitions and prize draws, QSL card exchanges, personalised rubber stamps, letterheaded writing paper.

These services and supplies are additional to the friendships resulting from membership.

We are a non profit club, all monies being returned to the members in the form of benefits. None of the founders or committee has any financial interest in the supply of goods or services. Accounts are open to inspection, audits are performed regularly, and club financial assets are deposited with a leading building society.

Membership fees are as follows: Full family membership $10 per annum (includes all dependants under 18 years of age); individual membership $6 per annum; pensioner membership 25 percent reduction.

Scott Stones VRA03
National President

***After reading young Fewster's Queensland Scene we were beginning to think that all Banana Benders were renegades, but it's good to see that we were wrong.***

***Good luck in the future Scott, and what about sending some club news to David Flynn to keep us informed on your good work.***

## 28 WHISKEY CLUB

We plan to hold four meetings a year, as well as group outings for families and singles. Members must be over 18 years of age, and licensed CB operators.

Our aim is to help people within the club, should they need help, and to get help to people in an emergency.

Our club is a social club only for families and singles to get together and enjoy outings, and a "family day out" for the children.

We are trying to increase our membership, and can guarantee a well run club, with funds staying in the club to benefit members.

Our address can be obtained from the Club Register. Please include a stamped self addressed envelope with your application for membership.

## VIC UHF CLUB

We are currently looking for new members to keep the club together, and on air — our main aim is to encourage people to join in our fun conversations, when we discuss topics of the day, holidays or whatever. We have some members who like caravanning, and we often meet at caravan parks for BBQs.

If anybody wants to join our club, write to: Secretary, Victoria UHF Club Inc., PO Box 407 Mt. Waverley Vic 3149.

The joining fee is $10, and a yearly subscription of $5 is payable on 1 March each year.

New members receive, by return post, a membership card, metal club badge, a copy of our monthly magazine "TWO WAY", and a copy of the club rules.

J.K. Polson
Treasurer

## NO BIRD???

You forgot something on the cover of your March '86 issue!

Maybe I can jog your memory . . .

NO COVER GIRL!!!

Did you forget, or did you do it on purpose — either way, all us CBers out here missed those curvey shapes we usually see on the front page.

Other than that, it was a great issue — keep 'em coming.

Catch you on the flip side.

The Bandit
Sandgroper territory

***It's a long story Mr Bandit, but basically, the editor is getting a bit frail, and his hand shakes too much to hold the camera steady — his mind keeps making appointments his body couldn't possibly keep at his age. (Not true — the model my apprentice hired was a real "barker" — I gave her a dog biscuit and a new flea collar and sent her home. PS You owe me twenty five bucks for helping you win the bet . . .)***

***Actually, we want some feedback from you, the readers — birds or no birds? Address your letters to: Cover Shot, c/o CB Action, GPO Box 628E Melbourne 3001, and enclose a photograph of any lovely lady you know who might be interested in being on the cover.***

# Back to You

## UHF ASSOC OF WA

On behalf of the UHF Association of WA, I would like to say a big thank you to CB ACTION for the article in the last issue. It was generally well received by UHFers, and members alike, and, as a result we have received enquiries from both here in WA and the eastern states. Letters came from as far away as Queensland and Tasmania, as well as Perth.

The information sheet published by us is primarily aimed at operators in Perth (especially in reference to repeaters), but if you substitute your own local area and repeaters, you will find that it applies anywhere . . .

I'm sure that a few eastern states operators will be making the trip across the Nullabor this summer for the America's Cup. I suggest that if they want to get a good "look in" around Perth that they contact myself or any of the clubs listed in the club register. I'm sure they'll find that CBers in Perth will be more than happy to extend a warm "Sandgroper" welcome when they arrive.

Once again, thanks for the article on our club.

Phil Street
Secretary

## NEW CBER

I am a new reader of your magazine, having just bought the March issue. I must say that it is a great magazine for the CB enthusiast, telling them anything and everything they want to know . . . or does it?

Being very new to the CB world, there are many things that I don't know, but would like to. While reading I became lost when words like repeater, scanner, skip, DOC, 27 MHz, SINAD, scramblers, antenna noise bridges etc. were mentioned. There were many other things, but time prevents me from continuing.

Being a people's magazine, which to me yours appears to be, how about giving amateurs a fair go and explain some, if not all of these?

J. Mitchell
Adelaide

***To try and answer just the small number of questions which you have posed in your letter would probably take the rest of the magazine — we suggest you contact a CB club in your area. You will find that the members will be only too willing to help you with advice on all aspects of CB.***

***Incidentally, we suggest that you don't class yourself as an "amateur" — that term is reserved for a section of radio enthusiasts who tend to have a rather high regard for their own abilities, and frown on us CBers. Some of them are in the "salt of the earth" category, and really do live up to the Amateur code, but a large majority of them tend to forget that they were once CBers themselves, and that the next generation of Amateurs will probably come from the same source.***

***In any event, welcome to CB . . . you don't have to be mad, but it helps.***

## HELP!!!

In your last issue you had an article on "Housing the Leopard" — it looks like a good idea.

Could you please help me with information on how to contact either of the authors, as I would like to correspond with them to see whether they can answer a few queries.

The names of the authors were: Graeme, VCH 035, and Bert, VCO 583, and the address given was Corinella Vic.

K. Brazendale
55 Torquay Rd
Devonport. Tas 7310

***We can't help you from our files, as we have lost their address, however, they might just read your letter and drop you a line. Graeme, Bert, where are you???***

## SOUTHERN RIVER RADIO GROUP

I am the Projects Co-ordinator with the above group, and although I have only been a member for a short time, I have found the group to be extremely well organised.

I became a member around late July 1985, just before our telethon fund raising effort began. It was a bit hectic getting organised, but it was worth it because we raised a record amount of $10,315, which in fact waa a bit of a shock to the members, as we weren't told the total until after it was announced on TV.

We aim to do even better this year, and also to assist other charities besides the telethon — The Motor Neurone Society of WA, the Slow Learning Childrens' Group, Muscular Dystrophy, and Appealathon. Since the group has been operating it has raised an astounding $85,000 for the local charities — our first donation was a small amount of around $158, so we have come a long way since 1975.

Our group is only small — about 22 members, but we are growing all the time. Our aims are to create and foster growth of the Southern River Adio Group throughout Australia, and to affiliate with other groups having similar aims and objectives. We also provide an emergency and assistance radio network to group members and the general public, and an advisory service to our members with advice on CB (both 27 MHz and UHF), and ham radio.

This service assists members in buying, installation, operation, and maintenance of equipment, and also with finance and other relevant matters.

Assistance is also available to members who want to organise, assist, and raise funds for chosen community projects. Each year we issue seven merit certificates to businesses in the area who have assisted the community in an outstanding way. A sample of this certificate is enclosed.

Glenn Lorimer
Project Co-ordinator
Southern River Radio Group.

# Back to You

***We have nothing but admiration for your group Glenn, and I hope that the media in your area has been kept informed of your fund raising efforts. It is an unfortunate fact of life that CBers as a group get rather poor treatment from the press, who seem to have a policy of only printing the bad things associated with our hobby.***

## SCRAMBLERS

In answer to Les Paget's comment about using scramblers on 11 metres (27 MHz), it does have its good and bad points.

The use of scramblers on 27 MHz would to some extent cause disruption to the frequency, but, have you ever tried to have an intelligent conversation without some insipid moron breaking up your QSO just for the hell of it? With a scrambler, at least it would give one the satisfaction of having a decent converstion for once, without some harebrained halfwit interrupting your QSO.

As for the cost of scramblers — some $300 according to reports, what is to stop a few local electronic shops bringing out a kit scrambler for around $150, well within the reach of A. Moron & Co.?

I hope that DOC does make them illegal on 11 metres, which is noisy enough now, with all the carrier droppers, swearers, and various other thickheads who seem to abound on CB these days.

Glenn Lorimer
Kongamia WA

***Firstly, we think that you have read something into Mr Paget's comments which weren't there. The way we read his letter, his comments referred to scramblers on UHF, which are the most common. Scramblers rely on the quality of the signal to be effective, and UHF does have the necessary quality required, because it is FM (frequency modulated). Scramblers on AM or SSB tend to be of a far different nature to those used on FM, and are rather primitive in comparison. We know that they are available, but up to this point we have not had a unit submitted for evaluation. We would be interested in trying one, and reporting on it.***

***On scramblers in general, we have heard a few on the UHF band here in Melbourne, and as far as we can tell, they were being used for business communications. Nobody seemed to worry about them, and it's small wonder. They can't understand what your saying unless they turn their scrambler off.***

***While it is harder to cause interference on UHF than it is on 27 MHz because of the "capture effect" on UHF, if an operator is dead set on being a nuisance, it doesn't matter whether you use a scrambler or not — he will still be there. The only advantage that you have is that he doesn't know what you are saying.***

***It all seems a bit pointless to us, unless you have some sort of paranoia about having to know everything about every conversation on every channel on every band!***

## CB PROBLEMS

The editor of your 'sister' magazine, Amateur Radio Action, has taken it on himself to single-handedly slam and condemn CB radio out of existance, claiming CB radio 'serves no legitimate purpose anymore', in Vol 8 Iss 11.

Whilst I agree there are some problems within our hobby, his fierce condemnation of CB radio is not warranted. As this fine magazine is totally dedicated to CB radio news and the furthering of the hobby, a scathing response to anyone suggesting our hobby 'serves no legitimate purpose anymore' should be directed by you and everyone interested in the hobby, at the editor of Amateur Radio Action.

The same editor continues on to say that problems in the CB service do not warrant consideration because of illegal operations in or near the band. If this sort of attitude extended to society, a police force would not be needed as there is so much crime that society does not need protecting.

I have already written to ARA's editor suggesting that it would be wiser if he confines himself to amateur radio's problems, of which there are plenty, rather than run down CB radio. However, I suggest anyone else who feels that CB radio is still a worthwhile service should write to Amateur Radio Action's editor and express your views on his comments and the advantages and benefits of CB radio.

Lastly, thanks for an excellent magazine.

GREG TOWELLS
Chester Hills NSW

***We have taken Tony Gilbert to task about his comments Greg, and in addition, have beaten the living daylights out of him with a wet tram ticket.***

***He has also had all his Brownie points cancelled. Thanks for your comments about CB ACTION — it makes all the hard work worthwhile.***

## CORRECT PROCEDURE

As a CBer and also a member of the Royal Volunteer Coastal Patrol, I would like to bring to notice of your many readers that the Royal Volunteer Coastal Patrol conducts classes to instruct the public in the correct procedure in the use of 27 MHZ Marine CB, also in the use of VHF & 2,4,6, MHZ.

These classes are held at Coastal Patrol Headquarters, near North Road, Brighton Boat Ramp. Volunteers are also required to assist to man this Base on Saturdays and Sundays as they operate a Search and Rescue Service on this section of the Bay along with other volunteer groups.

For further information phone Mr G. Martin on (03) 791 3350 or call into the Base Station on the weekend.

Also, would it be possible to register the Royal Volunteer Base Station in your magazine, as they are also Marine CBers!

Yours faithfully,

F. TOMLINSON
Royal Volunteer Coastal Patrol

## UHF GREMLINS

Some time last year, following a QSO with a mobile station on Channel 34 27MHz LSB, I returned to channel 35 which I and many other operators use as a call channel. There must have been several seconds between my last over and returning to 35. As I listened I heard my exact words, in my own voice, echoing back over the call channel — very strange. Even more strange, they were not the last words I had said on channel 34 but the end of a yarn I was telling and a couple of sentences previous after which I had given my finals and announced that I was returning to channel 35. The words which came back over 35 were not my last.

There would not have been enough time for somebody to rewind a tape and play it back.

How did this happen?

How did my voice get from channel 34 to channel 35 and why was there a time delay?

I don't know if anybody else heard it on channel 35, I was too sur-

# Back to You

prised to think of asking. Since then I have spoken to several people who seem to be knowledgable in these things and have been unable to find a satisfactory explanation.

The station I had been speaking to did tell me he had a UHF radio and a repeater. Could this be the explanation?

If there are any readers who would like to comment on this would they please contact me via my Club Post Office box.

Carole, Premiere Radio 102,
Premiere Radio Social Club,
P.O. Box 631,
Sunnybank,
QLD 4109.

***We wouldn't touch this one with a barge pole Carole!***

## PREMIERE RADIO CLUB

Following your telephone conversation with Premiere Radio 101, Chris, enclosed are a few details about our club. The Premiere Radio Club was founded in March 1985 by a small group of radio friends. Now, a year on and our first birthday, we are still together. We have widened our horizons and besides a growing local group we also extend the hand of friendship interstate. Throughout the past year, here in Brisbane, we have enjoyed many social occasions as well as the pleasure of talking to each other on the radio.

There is a wide age range within the group but we all have a common interest in CB Radio. We try to keep things on the light-hearted side by sending 'Fun' awards to our radio contacts.

We support charities and our latest effort is collecting stamps which we get plenty of in this hobby. Like many other groups we always try to be of assistance in cases of emergency. To quote from our information sheet which goes to every member, "We hope to encourage, by example, good manners and good conduct on the air".

As the name suggests we are a social group and we like to include the families in everything we do. We have a periodical news letter and make every effort to keep in contact with all our members. Membership is by invitation. The membership fee is not high and gives value for money. Any inquiries should be made to the secretary, Premiere Radio Social Club, P.O. Box 631, Sunnybank QLD 4109.

We hope that you may be able to put some of this information into one of your regular features such as Club News or Back to You.

Yours sincerely,
102 CAROLE
For Premiere Radio Social Club.

## CLUB REGISTER FORM

# CB Action Club Register

If you wish to have your club name listed in the CB ACTION Club Register, please ask your club secretary to fill in this coupon and post to "CB ACTION CLUB REGISTER, Box 628E GPO, Melbourne, Victoria, 3001."

Due to printing deadlines, it is possible for new entries to take up to two issues before appearing.

If you don't want to cut your copy of CB ACTION magazine, either photostat the coupon or send your entry in on a separate letter giving all the relevant details.

Overseas entries are welcome.

Please print or type — applications that are either illegible or not completely filled out may not be included in the listing.

Authorised by ..... Pres /Sec.

FULL CLUB NAME .....

.....

ADDRESS .....

.....

P/CODE ..... STATE .....

# CB Action Club Register

## NSW

Amateur and Citizens Radio Club, 2 Griffith Ave, Roseville NSW 2069.
Argonauts Radio Contact Club, c/-o PO Railway Town NSW 2880.
Barrenjoey Peninsula Area CB Radio Club, PO Box 25, Avalon NSW 2107.
Berowra CB Radio Club, PO Box 2, Berowra NSW 2081.
Black Ace CB Club & CB Callbook Club of Licensed Operators, 18 Malvina Pde, Gorokan NSW 2263.
Black Stump Radio Club PO Box 179, Coonabarabran NSW 2357
Blue Mountains Repeater Association, PO Box 358, Granville NSW 2142.
Bravo Victor Radio Club c/o 11 Canning St Bega NSW 2550
Central Western Citizens Band Community Radio Club, PO Box 628, Orange NSW 2800.
Disabled Water Sports Charity No 2023, c/- PO Saratoga NSW 2250.
G.L.C. Eastern Bases CB Radio Club, PO Box 767, Gosford NSW 2250.
Gosford Citizens Radio Club, PO Box 447, Gosford NSW 2250.
National Dingo Association c/- Smithville via Broken Hill NSW 2880.
Greater Cessnock City Radio Association, 48 Mayfield St, Cessnock NSW 2325.
MacLeay Valley CB Radio Club PO Box 34, Kempsey NSW 2440
Mallee Radio Australia CB Radio Club, PO Box 920, Griffith NSW 2680.
Metropolitan West Radio Club, 74 Van Diemen Ave, Willmot NSW 2770.
Mike India CB Radio Club, PO Box 778, Campbelltown NSW 2560.
Moonlighters District Radio Club, PO Box 13, Hawks Nest NSW 2324.
Native Dog Hill CB Club, PO Box 50, Warril NSW 2528.
November Alpha Club, PO Box 412, Narrandera NSW 2700.
Overland Radio Club inc (Sydney Branch), PO Box 295, Dee Why Sydney NSW 2099.
Pathfinder CB Social Club of Aust. Queanbeyan/Canberra Div PO Box 771, Queanbeyan NSW 2620
Pathfinder Radio Group NSW, PO Box 167, St Mary's NSW 2750.
Pioneer CB Radio and Social Club, PO Box 34, Boolaroo NSW 2284.
REACT NSW State Team, 716 Peel St, Albury NSW 2640
Riverina Radio CB Social Club, 29 Parkinson Cres, Griffith NSW 2680.
Shallow Water Sierra Whisky Club, PO Box 857, Nowra NSW 2540.
Tango Romeo Echo CB CLub, PO Box 688, Taree NSW 2430.
Tango-X-ray Side-band Radio Club of Australia, PO Box 664, Castle Hill NSW 2154.
The Beam Club of Australia, PO Box 633, Brookvale NSW 2100
Viking CB Raido Club PO Box 133 Miller NSW 2168
Western Radio Club, PO Box 88, Enfield NSW 2136.
Whisky Lima Radio Club PO Box 139 Revesby NSW 2212
Williams Valley Radio Club PO Box 50 Dungong NSW 2420
Wombat CB Radio Club, PO Box 348, Lavington NSW 2641.

## WA

ACRIM WA, South West Division, 68 Rogers Avenue, Katanning WA 6317.
Alpha Whiskey Alpha Radio Club 180 Bay View Dve Little Grove Albany WA 6330
Alpha Whisky Alpha Club, PO Box 997, Albany WA 7330.
Australian Radio Group, PO Box 429, Merridin WA 6415
Black Swans CQDX Club of WA, PO Box 220, Kwinana WA 6167.
Bunbury Radio Club Inc, PO Box 32, Bunbury WA 6230.
Canning River Radio Club, 53 Parkside Ave, Mt Pleasant WA 6153.
Carnarvon Radio Club, PO Box 294, Carnarvon WA 6701.
Freedom Group Perth, PO Box 9, Palmyra WA 6157.
Gascoyne CB Club PO Box 947 Carnarvon WA 6701
Golden Hawk CB Radio Club of Australia, PO Box 1183, Bunbury WA 6230.
Perth Acrem and Mustang CB Social Club, PO Box 193, Greenwood WA 6024.
Pilbara Radio Group, PO Box 95, Parraburdoo WA 6754.
Port Hedland Whisky Alpha CB Club, PO Box 2142, South Hedland WA 6722.
REACT WA State Team, 11 Coates St, Hamilton Hill WA 6163.
Sandgroper Club of South West WA PO Box 249 Collie WA 6225
Southern River Radio Group PO Box 38 Kelmscott WA 6111
The Mango Club, PO Box 241, Hillarys WA 6025
The UHF Association of WA Inc, PO Box 176d, Hillarys WA 6025.
Wanneroo Citizens Radio Emergency Services Teams WA Inc, PO Box 402, Wanneroo WA 6065.
Western Radio Club, 104 Atkinson St, Collie WA 6225.
Wild Geese International Combat Veterans Radio Communications Group, PO Box 73, Como WA 6152.

## QLD

ACRM QLD Inc, PO Box 213, Everton Park Brisbane Qld 4053.
Australian Bulldog Club, 37 Sunderland St, Garbutt Townsville Qld 4814.
Australian International CB Social Club, PO Box 150, Inala Qld 4077.
Brisbane Volunteer Emergency Monitoring Service, 22 Reks St, Buranda Qld 4012.
Bunya Radio Club, PO Box 575, Kingaroy Qld 4610.
Color Postcard Express International QSL and Postcard Swap Club (Australian rep), PO Box 111, Oakey Qld 4401.
Dirty Water CB Club of Australia, PO Box 262, Morningside Qld 4170.
Golden City CB Club, PO Box 557, Gympie Qld 4570.
Hervey Bay and District CB Club, PO Box 382, Pialba Qld 4655.
Inlanders CB Radio Club of Australia, PO Box 5712, Rockhampton Mail Centre Qld 4702.
Leichhardt Radio CB CLub, PO Box 2386, Mt Isa Qld 4815.
Premiere Radio Social Club, PO Box 631, Synnybank Qld 4109.
REACT QLD State Team, Box 5227, Cairns Mail Centre Nth Qld 4871.
Toowoomba District CB CLub, PO Box 5387, Toowoomba Qld 4350.
Toowoomba Mountain CB Club, PO Box 5299, Toowoomba Qld 4350.
Ultra Lite Radio Club Brisbane, c/- PO Box 13, Carina Qld 4152.
Zodiac International DX Radio of Australia, PO Box 189, Albion, Qld 4010.

Premiere Radio Social Club PO Box 631 Sunny Bank Qld 4109
Rum City CB Club PO Box 229 Qld 4670
Unicorn Radio of Australia PO Box 787 Woodridge Qld 4114

# CB Action Club Register

## SA

Australian Citizen Radio Monitors SA Inc (ACRM), PO Box 83, Prospect SA 5082.
Australian Independent Monitoring Service Inc, SA Division, PO Box 86, Stepney SA 5069.
Christie's Beach Citizens Band Radio Club, PO Box 22, Moana SA 5169.
Coonawarra CB Radio Club, 2 Eyre St, Barmera SA 5345.
Eagle Radio Group, PO Box 302, Morphett Vale SA 5162.
I Hate Washing Dishes, PO Box 210, McLaren Vale SA 5171.
REACT SA State Team (Inc), 1 Flavel Tce, Murray Bridge SA 5253.
Scorpion CB Radio Club, PO Box 312, Elizabeth SA 5112.
Southside CB Radio Club, PO Box 95, Glenelg SA 5045.
South West Radio and Social Club Inc, Box 381, Morphett Vale SA 5162.
Strangers CB Social Club, PO Box 79, Ingle Farm SA 5098.
Trans-World CB Radio Club International, 90 Crozier Ave, Daw Park SA 5041.

## VIC

A1 U Beaut Okker Radio Club PO Box 251 Morwell Vic 3840
Australian Citizens Radio Monitors Gippsland PO Box 251 Morwell Vic 3840
Australian Radio Social Club, PO Box 222, Seaford Vic 3198.
Bell Bird Club of Vic, c/- PO Box 39, St Andrews Vic 3761.
Bravo CB Radio Club, 11 Roxburgh Ave, Yallourn North Vic 3837.
Bravo Mike Radio Club, PO Box 94, Melton Vic 3337.
Bravo Sierra Bravo Radio Club (BSB), PO Box 277, Bendigo Vic 3550.
Eureka Base CB Radio Club PO Box 251 Morwell Vic 3840
Gippsland Emergency Monitoring Service (Inc) PO Box 938 Morwell Vic 3840
Gippsland Repeater Assocn, PO Box 77, Sale Vic 3850.
Grampians CB Club, c/- J. Delley, 1 Johnston St, Stawell Vic 3380
Horsham CB Club, PO Box 730, Horsham Vic 3400.
International Crusade Assocn, PO Box 2616W, GPO Melbourne Vic 3001.
Jack Daniels Whisky Club PO Box 278 Preston Vic 3072
Nightowl Radio Club of Victoria, PO Box 97, Huntingdale Vic 3166.
Omega Radio Club of Victoria, PO Box 50, Chadstone Centre Vic 3148.
Radio Charity Group, Latrobe Valley, PO Box 237, Churchill Vic 3842.
Radio Emergency Associated Citizens Team, 113 Blair St, Portland Vic 3303.
Radio Emergency Assoc, Citizens Teams Australia PO Box 114 Corio Vic 3214
Radio Enthusiasts Club of the Blind, PO Box 219, Glenroy Vic 3046.
REACT VIC State Team, 5 Damian Crt, Wodonga Vic 3690.
Region Dandenong CB Radio and Social Club, PO Box 57, Doveton Vic 3177.
Riviera Radio Club of Australia, c/- P. Robertson, 19 Taylor st, Bairnsdale Vic 3875.
Royal Volunteer Coastal Patrol PO Box 182 Brighton Vic 3186
Ethnic Ether (Double EE) Assocn, 31 Bride St Hampton Park Vic 3976
Southern Cross Radio Group, PO Box 365, Leongatha Vic 3953.
Sovereign Radio Club, PO Box 21, Sebastopol, Ballarat Vic 3356.
Tango Victor Radio Club, PO Box 3, Timboon Vic 3268.
The Black Panther DXing Social Club PO Box 527 Bendigfo Vic 3550
Ultra-Hi Club, 8 Peter St, Bell Post Hill Vic 3215.
Victorian Scorpion Radio Club (South Gippsland), 39 Quigley St, Morwell Vic 3840.
Victoria UHF Radio Club Inc, PO Box 407 Mount Waverley Vic 3149
28 Whiskey Group Social Club Base of Vic c/o Bob, 33 Kennedy St Longwarry Vic 3816

## TAS

FIB UHF Club, PO Box 18, Ridgley Tas 7321.
Sierra Tango Radio Club, PO Box 433, New Norfolk Tas 7140.
United Frequency Operators of Tasmania, 7 Jacob Ave, Georgetown Tas 7253.

## NORTHERN TERRITORY

Australian Citizen Radio Monitors, NT branch Inc, PO Box 40327, Casuarina NT 5792.
Darwin CB Radio Club, PO Box 1234, Darwin 5794.

## INTERNATIONAL

Dayglo QSL Club, 13 Synite Place, Rostrevor, BT34-3EP, Co Down, Northern Ireland, UK.
Ethnic Ether (Double EE) Assocn 31 Bride St Hampton Park Vic 3976
Gumboot QSL Club, PO Box 4127, New Plymouth 4630 New Zealand.
Lakeside QSL Club of Australia, 18 Malvina Pde, Gorokan NSW 2263.
REACT Australia Headquarters 1 Flavel Tce, Murray Bridge SA 5253.
REACT International Inc, 3653 Woodhead Dve, Northbrook, Illinois USA 60062.
Three Vikings QSL CLub, PO Box 34, 642 21 Katrineholm Sweden.
Wainui Radio Club, PO Box 836, Wellington NZ.

***Get your club's name in the register. Send us some details of your activities and your areas of interest. Maybe we can help you get some more members.***

# AUSTRALIAN UHF REPEATER LIST

| AREA | CHANNEL | CALLSIGN | LOCATION | SPONSOR |
|---|---|---|---|---|
| **New South Wales** | | | | |
| Jindabyne | 1/31 | JIN01 | Jindabyne | Marist Brothers, Corinya Alpine Centre |
| Sydney | 1/31 | SYD 01 | Hurstville | N.I.R.O. |
| Corowa | 1/31 | COR 01 | Corowa | Corowa Electronics |
| Tamworth | 1/31 | TAM 01 | Windworth | Landlink Communications |
| Blue Mountains | 2/32 | KUR 02 | Kurrajong Heights | Blue Mtns Rptr Assoc. |
| Parkes | 2/32 | PAR 02 | Parkes | Bionics Australia |
| Narrabri | 2/32 | NBR 02 | Castletop Mountain | Lance Hannaford Electronics |
| Sydney | 3/33 | SYD 03 | Prospect | Philips-TMC |
| Tenterfield | 3/33 | MTI 03 | Mt McKenzie | Nathan Ross Electronics |
| Armidale | 4/34 | ARM 04 | Armidale | New England Mobile Communications |
| Albury | 4/34 | ALB 04 | Lavington | Albury Communications |
| Muswellbrook | 4/34 | MUS 04 | Mt Arthur | General Communications |
| Newcastle | 6/36 | NEW 06 | New Lambton | |
| Coffs Harbour | 6/36 | COF 06 | Coffs Harbour | Country Wide Communications |
| Moree | 6/36 | MOR 06 | Terry Hi-Fi | Des Groth Radio-Electronics |
| Sydney | 7/37 | SYD 07 | Willoughby | Philips-TMC |
| Bathurst | 8/38 | BAT 08 | Mt Panorama | Serv-U Appliance Centre |
| Bimmil Hill | 2/32 | EDN 02 | — | — |
| Deniliquin | 3/33 | DNQ 03 | Deniliquin | Deniliquin Machinery |
| Mt Bobbara | 1/31 | BO 01 | — | — |
| Murtee Stn (Wilcannia | 1/31 | MRT 01 | — | — |
| Raus | 2/32 | LIS 02 | — | — |
| Tumbarumba | 3/33 | MTI 03 | Mt Ikes | — |
| Walbundrie | 2/32 | WBD 02 | — | Corowa Electronics |
| Glen Innes | 7/37 | GLI 07 | Mt Rumbee | Glen Innes Amat Radio Club |
| Lismore | 1/31 | LIS 02 | RAUS | — |
| Bega | 6/36 | BGA 06 | Mumbulla Mt | Athol McCoy Twoway Radio |
| Newcastle | 1/31 | CHT 01 | Charlestown | — |
| **ACT** | | | | |
| Canberra | 2/32 | CBA 02 | Isaacs Ridge | Philips-TMC |
| **Victoria** | | | | |
| Melbourne | 1/31 | MEL 01 | Broadmeadows | Philips-TMC |
| Hamilton | 1/31 | HAM 01 | Mt Bainbridge | Hamilton Electronics |
| Bairnsdale | 1/31 | TAM 01 | Mt Nugong | Bairnsdale Communications |
| Moe | 2/32 | MOE 02 | Moe | Gippsland Repeater Assoc. |
| Ballarat | 2/32 | BAL 02 | Mt Buninyong | Central Highlands Repeater Association |
| Melbourne | 3/33 | MEL 03 | Lysterfield | Philips-TMC |
| Yelta | 3/33 | YLA 03 | Yelta | Nor-Co Sales & Service |
| Bendigo | 4/34 | BEN 04 | Specimen Hill | Central Victorian Repeater Association |
| Carrajung | 4/34 | CRJ 04 | Carrajung | Carrajung UHF CB Repeater Association |
| Hawkesdale | 4/34 | HAW 04 | Hawkesdale | |
| Melbourne | 5/35 | MEL 05 | Olinda | Paravic Sports Association |
| Gippsland | 6/36 | GIP 06 | Mt Taylor | Gippsland Repeater Association |
| Ararat | 6/36 | WIL 06 | Mt William | Mt William UHF CBRs Rpt. Committee |
| Wangaratta | 6/36 | WAN 06 | Warby Ranges | Corowa Electronics |
| Melbourne | 7/37 | MEL 07 | Frankston | Powerband Communications |
| Shepparton | 7/37 | SHP 07 | Shepparton | Angus Communications |
| Victoria (anywhere!) | Various | MEL 99 | Anywhere | Omega Radio Club |
| Lake Eildon/Alexandra | 1/31 | ALX 01 | Mt Eildon | Weeks Radio |
| Mt Wombat | 3/33 | WBT 03 | — | — |
| Weeaproinah | 2/32 | WPH 02 | — | — |
| **Queensland** | | | | |
| Brisbane | 1/31 | BNE 01 | Mt Cotton | Philips-TMC |
| Bundaberg | 1/31 | WBB 01 | Mt Perry | Bundaberg Hi-Fi Stereo |
| Mt Isa | 1/31 | JLS 01 | Mt Isa | Queensland Educational Department |
| Rockhampton | 1/31 | RKY 01 | Mt Archer | Capricornia UHF Repeater Association |
| Atherton-Mareeba | 1/31 | ATH 01 | Rocky Creek | Maartens Electronics |
| Gunalda | 2/32 | GUN 02 | Gunalda Range | Ralph Hill Electrical |
| Taroom | 2/32 | TAR 02 | Taroom | Taroom Repeater Association |
| Toowoomba | 2/32 | TWB 02 | Toowoomba | Custom Scientific Electronic |
| Mackay | 3/33 | MKY 03 | Farleigh | Mackay Citizens Repeater Group |
| Monto | 3/33 | MTO 03 | Pine Mountain | Monto UHF CBRS Repeater: Committee |
| Tin Can Bay | 3/33 | DIP 03 | Double Island Point | Tin Can Bay Lions Club |
| Springsure | 3/33 | SPR 03 | Springsure | Bauhina S.E.S. |
| Mt Hopeful | 4/34 | HOP 04 | Mt Hopeful | Mt Hopeful UHF Repeater Association |
| Mt Mowbullan | 4/34 | GTC 04 | Mt Mowbullan | G.T. Communications |
| Bundaberg | 4/34 | BBG 04 | Sloping Hummock | Bundaberg Hi-fi Stereo |
| Goondiwindi | 4/34 | GDI 04 | Goondiwindi | Border TV & Radio Communications |
| Brisbane | 5/35 | BNE 05 | Mt Glorious | ACRM (Queensland) |
| Caloundra | 6/36 | NOC 06 | Bald Knob | Ralph Hill Electrical |
| Gladstone | 6/36 | GLD 06 | Mt Larcom | Nixon Controls |
| Palm Island | 6/36 | PAL 06 | Palm Island | — |
| Brisbane | 7/37 | BNE 07 | Toohey Mountain | Custom Scientific Electronics |
| Murgon | 7/37 | MUR 07 | Murgon | Murgon Repeater Association |
| Biloela | 7/37 | BIL 07 | Mt Bertha | Biloela Repeater Association |
| Clermont | 1/31 | BDK 01 | — | — |
| Dingo | 6/36 | BLK 06 | Blackdown T/land | Blackdown Reptr Assoc |
| Marlborough | 2/32 | MAB 02 | — | — |
| Mt Yarrabah | 3/33 | YRB 03 | — | — |
| Trinidad | 2/32 | TRN 02 | Trinindad Station | — |
| Cairns | 3/33 | GCG 03 | Mt Yarrabah | GCG Communications |
| Mt Stewart | 1/31 | STU 01 | Mt Stewart | Olbis Ind |
| Roma | 1/31 | ROM 01 | Mt Bassett | Roma Teleradio |
| Mt Cudmore | 2/32 | CUD 02 | Mt Cudmore | |
| Coolangatta | 4/34 | CLG 04 | Coolangatta | Philips Comm. |
| Burnett Ranges | 6/36 | CBT 06 | Mundubbera | Custom Sci. Elec |
| Yaraka | 7/37 | YKA 07 | Mt Slowcombe | Yaraka Rpt Assn |

## South Australia

| | | | | |
|---|---|---|---|---|
| Adelaide | 1/31 | ADL 01 | Summerton | Philips-TMC |
| Cleve | 2/32 | CLV 02 | Mt Nield | Cleve Repeater Association |
| Mt Gambier | 2/32 | MTG 02 | The Bluff | South-east UHF Repeater Association |
| Adelaide | 3/33 | ADL 03 | Trott Park | Philips-TMC |
| Kangaroo Island | 4/34 | PKI 04 | Parndana | Kangaroo Island Repeater Association |
| Adelaide | 5/35 | ADL 05 | Hawthorndene | ACRM (South Australia) |
| Whyalla | 6/36 | WHA 06 | Mt Laura | Gulf Communications |
| Quarry Hill | 7/37 | CLR 07 | Quarry Hill | Mid-north Repeater Association |
| Mt Bryan | 8/38 | BRY 08 | Mt Bryan | Mt Bryan Repeater Association |
| Port Lincoln | 8/38 | PLT 08 | Tumby Bay | Kayam Electronics |
| Black Rock Peak | 2/32 | BRP 02 | Black Rock Peak | Toops Electrical |
| Grose Island | 5/35 | GRS 05 | — | — |

## Nth Territory

| | | | | |
|---|---|---|---|---|
| Darwin | 1/31 | DRW 01 | Darwin | Seascan Communications |

## West Australia

| | | | | |
|---|---|---|---|---|
| Perth | 1/31 | PER 01 | Wannero | Philips-TMC |
| Bunbury | 2/32 | BUN 02 | Rowlands | Greyhound TV Sales/Service |
| Perth | 3/33 | PER 03 | Roleystone | Philips-TMC |
| Mt Barker | 7/37 | MTB04 | Mt Barker | Plantaganet Repeater Institute |
| Dinninup | 4/34 | BYB 04 | Dinninup | Boyup Brookfarm Communications Group |
| Wyalkatcham | 6/36 | WKM 06 | Wyalkatcham | D & GJ Peace |
| Margaret River | 6/36 | MGR 06 | — | |
| York | 7/37 | YRK 07 | Mt Bakewell | UHFAWA |
| Wickham | 1/31 | WIK 01 | — | — |

## Tasmania

| | | | | |
|---|---|---|---|---|
| Central Tasmania | 3/33 | NEC 03 | Tower Hill | NE Repeater Group |
| Hobart | 1/31 | HBT 01 | Mt Faulkner | CREST |
| Launceston | 2/32 | LCN 02 | Mt Arthur | Launceston Repeater Association |
| Burnie | 8/38 | BRN 08 | Round Hill | North-west Coast Repeater Association |
| Triabunna | 6/36 | REC 06 | Mt Tombs | East Coast UHF Repeater Assoc. |

***This list was compiled from official DOC information club newsletters, reader's letters and telephone calls. If you have any additional information as to new repeaters, locations, sponsors etc, please forward the information by mail to:***

***CB Repeater List***
***c/o GPO Box 628E***
***MELBOURNE. VIC 3001***

# advertise free

Readers of CB ACTION QUARTERLY may use the classified columns to the extend of 25 words without charge. Each additional word will cost five cents. Address and telephone numbers are counted as wordage. Two insertions from the one person in one issue will be costed as one advertisement.

Advertisements from commercial establishments will not be acepted except as display advertising. Prices and details can be obtained on application to The Advertising Manager CB ACTION QUARTERLY, Box 628E GPO Melbourne Victoria 3001.

Photographs may be submitted to accompany advertisements without charge and will be published provided space is available. Firm requests for the insertion of photos must be accompanied by an additional $2 fee. Every attempt will be made to ensure that the advertisements will be included in the next issue of the magazine. Priority will be given on a first come first served basis dependant on the space available. The publishers reserve the right to refuse any advertisement which in the opinion of the Editor does not comply with the Victorian Consumer Affairs Act (1972) or is not legible.

Post the coupon to: CB ACTION CLASSIFIEDS, BOX 628E GPO MELBOURNE 3001.

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ADVERTISEMENTS WILL NOT BE ACCEPTED UNLESS THE FULL NAME AND RESIDENTIAL ADDRESS OF THE ADVERTISER APPEARS ON THE BOTTOM OF THE COUPON. THIS INFORMATION WILL NOT BE PUBLISHED.

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| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 |

Name.....

Address.....

# CLUB NEWS

## VICTOR RADIO CLUB

Located on the south coast of Australia, about an hours' pleasant drive from Adelaide, is the township of Victor Harbour. This is the home of the Victor Radio Club, a sizeable group of radio enthusiasts whose club motto is 'Friendship Through Radio'.

"The Victor Radio Club is one club that is continuing to grow, even though it would seem that most CBRS operators don't consider club involvement has much to offer them' says club member Brian, SBA-190.

"I would like to think that the answer can be found in the club motto. The young and old are catered for in the club, and all are encouraged — not bullied — to behave responsibly on the airwaves. The club is known locally, and in other places, for its assistance in times of emergency, and charity. Members of the past committee, and new, are recognised by the 'locals', some being the corner-stones of local society.'

The Victor Radio Club can be contacted at PO Box 26, Victor Harbour SA 5211.

## CLUB PUBLICITY

I was gratified by the response to an item that appeared in last issue's 'Club News', regarding publicity for radio clubs. The publicity officers of a few clubs even sent me copies of their own press releases, based upon the guidelines of the article, and copies of the write-ups they generated in the local press.

The 'Club News' item was, in fact, a very condensed version of an article on the same topic, that appeared in a recent edition of 'Amataeur Radio Action' — Volume 8, issue 6, I believe. This may prove an interesting read for those who enjoyed the CBA item.

Thanks again to those clubs who have put me on their mailing list to receive their magazines and newsletters. Keep 'em coming!

## BLACK SWANS CLUB

Officially titled the 'Black Swans CQ DX Club of WA', this group was founded in May 1983, by keen DXers from the Rockingham-Kwinana area, to the south-west of Perth. Membership to the Black Swans has since been opened up to DX enthusiasts across Australia, with others as far afield as South Africa, France and England.

The club provides a monthly newsletter, QSL cards and other trimmings such as car stickers and badges. Each summer sees a variety of club outings, with the cold winter nights spent on air with a weekly QSO and quiz session.

Members of the Black Swans must hold a current CB licence, and **must** QSL. For further details — contact the secretary (Colin, Black Swan 18), at PO Box 12 Rockingham WA 6168.

## CLUB REGISTER

The CBA Club Register continues to grow, meaning that the new CBer in your area can contact the local club. Just to make things easier, would club secretaries please note that matters concerning the Club Register — new listings, changes to addresses and such — should be sent directly to: CB Action Club Register GPO Box 628E, Melbourne Vic. 3001.

Apart from that, club news should be sent to: PO Box 429, Milsons Point NSW 2061.

This should ensure that everyone gets the information they need, either to update the Club Register, or for this column itself.

## ACBRO

As it seems that CB radio is slowly picking up once again — through the industry, clubs and of course this magazine — many operators may be wondering how the views of the CBer are being passed onto the Department of Communications, and perhaps how they — as individuals or club members — can be more active in this area.

In earlier days, there was the lobby group known as the NCRA — National Citizens' Radio Association. Founded in 1976, when the still-illegal CB radio movement was rapidly gaining strength, the NCRA represented the CB community, predominately through clubs, to DOC and other bodies.

Now that the NCRA has long since faded away (around 1982, I think), what remains to ensure that the voice of the CB enthusiast is still heard — and listened to?

Very few individual operators are involved to any extent with this. There may be the odd letter or phone call to the local RI, but that's where it ends.

The matter rests almost solely with radio clubs and emergency monitoring groups. The larger or better organised clubs of each area have contact with their DOC offices, and it can be very much a two-way process.

On a higher level, there are groups such as West Australia's UHFAWA, and Victoria's Omega Radio Club, which are recognised as state-representatives by the DOC.

On the national level, however, one group remains. The Australian Association of Citizens Band Radio Operators (thank God they abbreviate it to ACBRO!) began in 1980, and continues with its aim to promote CB and unity amongst CBers, and in acting as a 'lobby' group for CB operators.

ACBRO represent many clubs, mostly from SA/WA/Tasmania, as well as individuals. To keep members informed, there is a bi-monthly newsletter, 'ACBRO Action'. ACBRO operates from Adelaide, where a monthly HF broadcast and weekly UHF net provide more regular inter-action within the association.

ACBRO has also taken part in submissions to DOC on a number of matters of importance to the CBRS. These include the 1980 CBRS Review, the 1981 proposals for UHF CB repeaters, and the recent Radio-Communications Act.

I would recommend that any clubs and individuals who are interested in joining with ACBRO and making themselves heard, should write to the Association at PO Box 170 Walkerville SA 5081.

## TRANS-WORLD RADIO

Finally, a few brief words about the Trans-World CB Radio Club. The club's president, Rod (Trans-World Radio 001), informs me that the club conducts an 'on-air forum' on the first and third Thursday of each month. This commences with a segment of news and club information, and is followed by a discussion on any 'radio-related or other topical issue'.

To join in, nets are held between channels 16 and 22 LSB, from 7.40pm Central Standard Time (8.10pm EST). The Trans-World Radio Club can be contacted by writing c/- 90 Crozier Ave., Daw Park SA 5041.

By the way, there is a noticeable bias towards clubs from SA and WA in this issue — simply because no-one from Victoria or my home-state of NSW bothered to get in touch, not to mention Tassie or Joh-land. So, if you care to pressure your club's publicity officer or secretary to send me more info, get to it!

The address is CBA Club News, PO Box 429, Milsons Point NSW 2061.

# Classifieds

**FOR SALE** 500MHz frequency period counter in good condition, $180 ono. Write to G. Wyhoon, 33 Bena Rd, Korumburra, Vic, 3950 or phone (056) 55 1700.

**CODEX INTERNATIONAL**, published twice yearly, lists every active QSL Swap Club worldwide. January, 1986 edition completely sold, July, 1986 edition available in Australia from 16 June. Price $5 post paid surface mail, overseas airmail $2 extra to NZ, $4 extra elsewhere. Sole Australian distributors — Lakeside Club, 18 Malvina, Gorokan, NSW, 2663.

**THE CALLBOOK** lists every known licensed CB operator in over 70 countries. For free listing send full name, both Christian and surname, address and licensed call letters and number right away. Optional — if you would like membership of the Callbook Club include 50¢ stamp for membership card and club literature. Callbook, 18 Malvina, Gorokan, NSW, 2263.

**THE LAKESIDE** QSL CLUB invites membership applications from reliable QSL card collectors who really do QSL 100%. Application form free on request or, if you wish, send $1 stamp for specimen copy of club quarterly magazine (refundable i you join). Secretary, 18 Malvina, Gorokan, NSW, 2263.

**QSL COLLECTORS.** We are now in our eighth year — send for details today and fill up that album! Gumboot QSL Club, PO Box 4127, New Plymouth, New Zealand.

**JOIN THE FASTEST** growing Okker Radio Club. Write to: A1 You beaut Okker Radio Club, PO Box 251, Morwell, Vic, 3840 for free membership. Please enclose stamp.

**WANTED** circuit diagram for Royce 23 ch AM radio. Original or photocopy, pay good price. Send details to M. Hoggan, 37 Darling St, Heywood, Vic, 3304.

**QSL COLLECTORS** send today for information about the Gumboot QSL Club, PO Box 4127, New Plymouth, New Zealand, 4630. Active members in 71 countries worldwide!

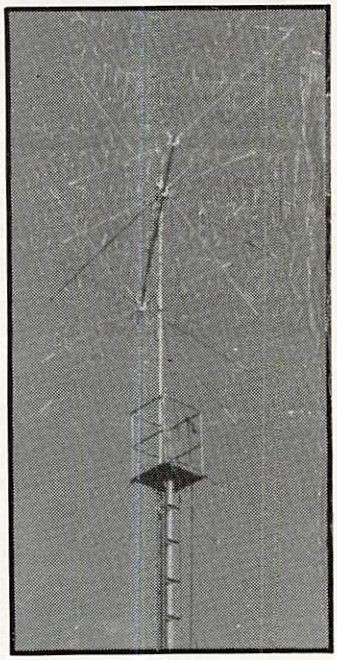
**SWAP DX 160** communications receiver, very good condition for UHF CB in good condiion. Phone (047) 87 7576 or write 11 Braeside St, Blackheath, NSW.

**FOR SALE** scanner listing of Australian civil/military VHF/UHF aeronautical frequencies. Approx 500 sorted freq/location/service. $5. D. Vale VK3CDI QTHR, PO Box 2395, Mildura, 3500.

**WANTED** to buy SSB/AM linear amp 100 watt or 35 watt. Will buy at good price. Phone T. McEvoy (060) 25 2243.

**EUREKA** BASE CB Radio Club. For an application form to join this club, please write to: Eureka Base 6, PO Box 251, Morwell, Vic, 3840.

**AVANTI MOONRAKER** 4 elements vertical 4 elements horizontal quad reflector fully imported from States. New in box cannot use because of tower guys $350. Regretful sale. (048) 61 2092 or c/o A. Walsh, P.O. Bowral, NSW 2576.



**QUAD ANTENNA** plans. The best antenna, one to six element, no tuning problems, low SWR. Send $10 and SAE to C. Richards, Unit 1/652 Grange Rd, Henley Beach, South Australia 5022.


NEW RANGE OF COLORED CARDS IS NOW AVAILABLE

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**The quality is top class, but, as we specialise in QSL cards the prices are the best you will get in Australia (anywhere else too for that matter).**

**For samples and information sheets please send a 66 cent stamp to:**

**BINT SERVICES**

**P.O. Box 323, Cheltenham, 3192, Victoria. (Reg. office: 38 Granya Grove Mt Eliza 3930 — no enquiries to this address please.).**

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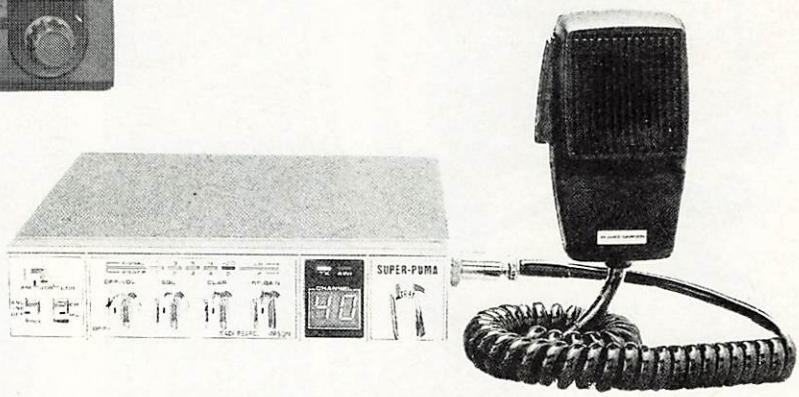
**FEATURES:** Fully Electronic; Full 5 Watts; Repeater Fitted; Reverse Repeater; Scanning; one touch for Emergency, Call and Highway; Remote Channel Selector Microphone; Ultra Light Weight (700 gs).
**OPTIONS:** CTCSS; Selcall; Portapack (shoulder pack); Base station module.

## SIMBA 40CH AM

**FULL OF FEATURES** like volume; squelch; Mic Gain; RF Gain; front mounted mic socket. (See Rig Report this issue).

Available also in 12 channel PLL marine.

## SUPER PUMA 40CH AM/SSB

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